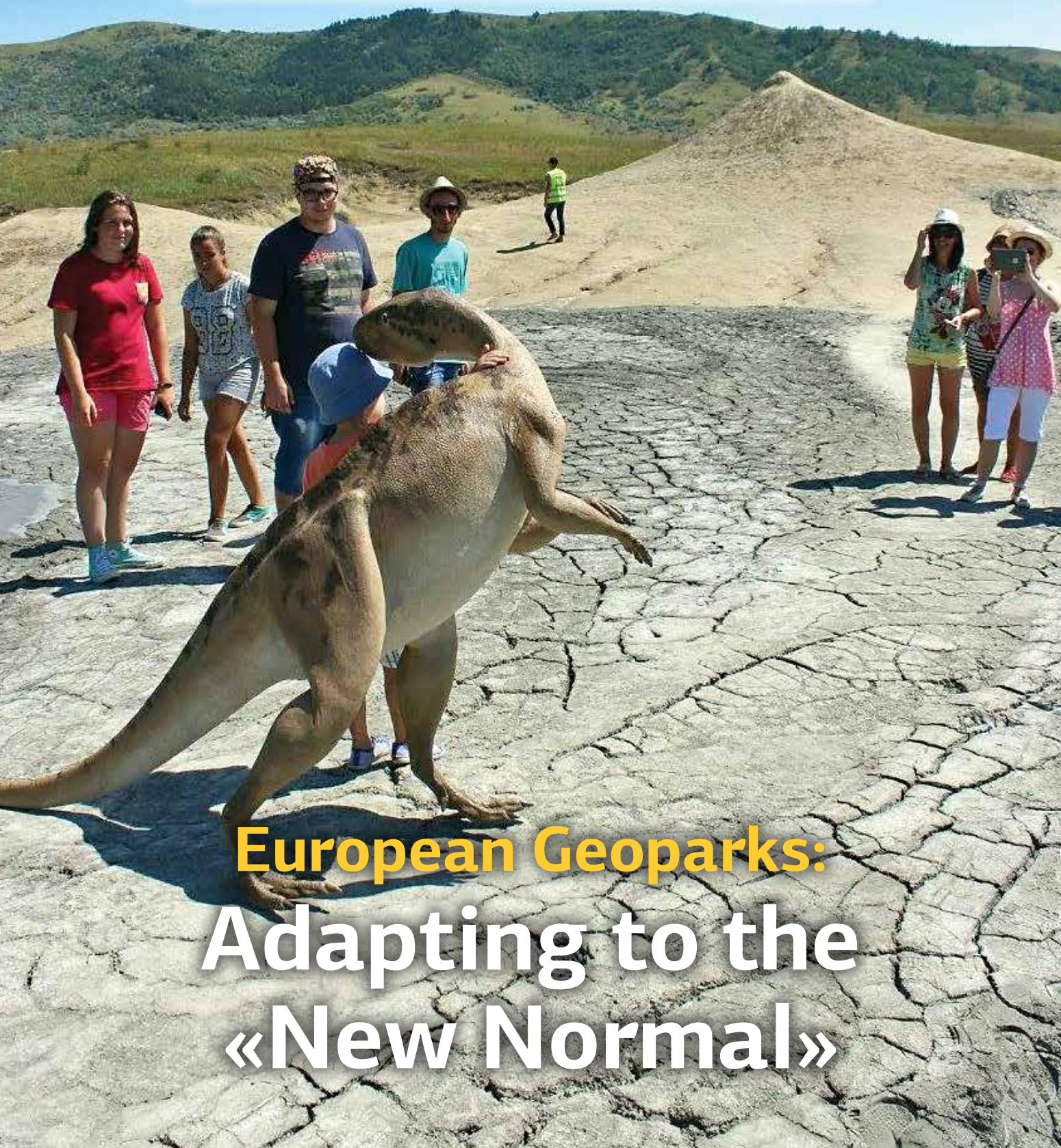


EUROPEAN GEO PARKS NETWORK

European Geoparks Magazine ● Issue 20



European Geoparks:
Adapting to the
«New Normal»

THE EUROPEAN GEOPARKS NETWORK

www.europeangeoparks.org

CALENDAR

2023

7-11 September: 10th International Conference on UNESCO Global Geoparks, M'Goun UNESCO Global Geopark (Morocco).

September: 48th EGN CC Meeting (digital meeting).

27 September: International Tourism Day.

6 October: International Geodiversity Day.

13 October: International Day for Disaster Risk Reduction.

5 December 2022: World Soil Day.

11 December: International Mountain Day.

2024

March: 49th EGN CC meeting, Kula Salihli UNESCO Global Geopark (Turkiye).

22 March: World Water Day.

21 April: International Mother Earth Day.

30 April: GGN Annual General Assembly for Accounts.

11 May: International Migratory Bird Day.

18 May: International Museum Day.

May-June: EGN WEEK.

June: International Course on UNESCO Global Geoparks, Lesvos Island UNESCO Global Geopark (Greece).

5 June: World Environment Day.

8 June: World Oceans Day.

17 June: World Day to Combat Desertification & Drought.

July: Plastic Free July.

July: 8th International Summer University on 'Geoparks, Sustainable Regional Development and Healthy Lifestyles'.

9 August: International Day of the World's Indigenous Peoples.

September: 50th EGN Coordination Committee Meeting.

September: 8th Asia Pacific Geoparks Network Symposium, Non Nuoc Cao Bang UNESCO Global Geopark (Vietnam).

27 September: International Tourism Day.

October: 17th EGN Conference, Reykjanes UNESCO Global Geopark (Iceland).

6 October: International Geodiversity Day

13 October: International Day for Disaster Risk Reduction.

5 December: World Soil Day.

11 December: International Mountain Day.



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Geoparks: Adapting to the “New Normal”

The European Geoparks Network (EGN) is one of three regional networks designated as UNESCO Global Geoparks (UGGps). The variety of activities and innovations highlighted in the 20th issue of the EGN Magazine show how, through networking and engaging with their respective communities and stakeholders, the European Geoparks have adapted successfully to the “New Normal”. Physical meetings, resumed with the EGN spring meeting in De Hondsrug UGGp and the 16th EGN Conference organized by Sesia Val Grande UGGp. With the designation of six new Global Geoparks, EGN affiliation increased to 94 members in 28 countries.

Promoting geotourism, developments in infrastructure and geoconservation are significant activities in achieving sustainable economic development. The importance of food in promoting geotourism is highlighted in articles from Parco del Beigua, Idrija, and Vis Archipelago UGGps. Geoconservation, geoheritage and the environment are significant components in the new visitor centre in Bakony – Balaton UGGp, the new interpretive panels in Estrela UGGp and improvements in Papuk UGGp’s infrastructure. Working in partnership is highlighted in articles by Famenne Ardenne, Lanzarote and Chinijo Islands, Maestrazgo, Novohrad-Nógrád, Sobrarbe-Pirineos and Villuercas-Ibores-Jara UGGps and the Burzen and Cliffs of Moher’s ecotourism network. Troodos UGGp promotes the Kalopanagiotis Village as a tourist destination. Training professional guides and a cross-border treasure hunt are significant activities in Rocca di Cerere and Karawanken-Karavanke UGGPs. Visitors can enjoy the Two Billion Years Tours in Lauhanvuori – Hämeenkasgas UGGp. Massif des Bauges UGGp’s “Respect!” campaign reminds tourist of the rules for good behaviour in the mountains. Molina Alto Tajo UGGp describes artificially reconstructed man-made geosites. A Self-portrait of Petra, highlights the benefits of becoming a young volunteer in Hațeg UGGp.

Every UGGp engages in formal and informal education. The global climate and biodiversity crises are significant components of Bergstrasse - Odenwald UGGp’s “Climate Heroes”, as well as the citizen science project in Arouca UGGp, and engaging with children in the Apuan Alps UGGp. Magma UGGp highlights the links between the GEOfoodEDU project, geodiversity, and culture. “Actions to inform and raise awareness about wetlands and birds” is a major activity in Lesvos Island Geopark. Gea Norvegica UGGp uses schoolyards as places to do fieldwork while Luberon UGGp develops schoolyards as green corners for rain. The new Geopark Card Game helps the youngest residents get to know the uniqueness of Geopark Harz • Braunschweiger Land • Ostfalen UGGp. Young people now have a platform to communicate their wishes, ideas, and visions in Muskau Faltenbogen / Łuk Mużakowa UGGp. The Expanding Horizons project connects disadvantaged children with the landscape in the North Pennines AONB and UGGp. Vikos-Aoos UGGp organized the Geopark’s 1st Summer School in collaboration with the Aristotle University of Thessaloniki.

The media are important for transferring information about geoparks to communities and visitors. Together with local schools, Adamello Brenta UGGp developed a new radio programme with Radio Dolomiti. The new website, “A Tour through Earth History” illustrates Earth History in the Swabian Alb UGGp, while Copper Coast UGGp produced a virtual reality geotour along its coastline. The facilities in Central Catalonia UGGp are promoted on a new web app. Orígens UGGp’s “Chain of Values” facilitated the launch of an online sales platform.

Networking is a major activity in all UNESCO Global Geoparks. GeoMôn and Lanzarote and Chinijo Islands UGGP’s exchanged ideas that could be transferable to other geoparks. Kula Salihli UGGp hosted the International Geomorphology Congress, and Katla UGGp welcomed participants in the Geoheritage and Ruritage projects.

The importance of understanding soils is a new addition to the activities in UNESCO Global Geoparks. Vulkaneifel UGGp launched a series of information panels explaining different soils that can be found in the Geopark. A farmer in Naturtejo UGGp emphasizes the importance of water, and soil types for cultivating olives. The Ore of the Alps UGGp was awarded the ERDREICH (= ground soil) PRIZE for its involvement in soil protection.

UGGps provide a focus for scientific research. Causses du Quercy UGGp brought the extinct Chalicothere to life in a project in which students created their own representations of the animal. Pollino UGGp highlights the significance of the Pollino mountains as an archaeological archive. The new geo-conservation measures at the Dinosaur Tracksite Bad Essen-Barkhausen in TERRAvita UGGp resulted in the taxonomic revision of the footprints. Geoscience transfer using artistic sculptures is a major collaborative project in the UNESCO WHS Messel Pit Fossil Site.

UGGps support international events and the UN’s Sustainable Development Goals (SDGs). English Riviera UGGp organized a visually dynamic event for international Earth Hour on 26 March 2022. The North West Highlands Natural Capital Approach aligns with the UN’s Sustainable Development Goals 3, 13 and 15 and integrates the Geopark into Agenda 2030.

The presentation of “The First 100 International Union of Geological Sciences (IUGS) Geological Heritage Sites”, hosted by the Basque Coast UGGp, emphasizes the strong association between UGGps and IUGS.

In adapting to the “New Normal” European Geoparks have strengthened the ways in which they engage with their communities, with visitors and with each other. Through their involvement with the environment and the climate and biodiversity crises geoparks demonstrate that their bottom-up approach can make a significant difference now and in the future.

Tony Ramsay,
Publication Editor

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Basque Coast UNESCO Global Geopark, Spain

The Basque Coast Geopark hosted the presentation of The First 100 IUGS Geological Heritage Sites



Final picture of the event in the beach on Itzurun, Basque Coast UGGp, one of the selected sites among the First 100

The Basque Coast Geopark hosted from October 25 to 28 the presentation of "The First 100 International Union of Geological Sciences (IUGS) Geological Heritage Sites". More than 250 specialists from 40 nations and ten international organizations, representing different disciplines of the Earth Sciences, participated in the selection of sites. One hundred and eighty-one candidate sites from 56 countries were proposed and were evaluated by 33 international experts. The result of this challenging and collaborative process is the list of the First 100 IUGS Geological Heritage Sites that was presented in Zumaia by most of the authors.

Recognition by the IUGS gives these sites visibility. It identifies them as being of the highest scientific value. They are sites that served to develop the science of geology, particularly its early history. They are the world's best demonstration of geologic features and processes. They are the sites of fabulous discoveries of the Earth and its history. Many of the "First 100" are well protected

Nickolas Zouros, President of the Global Geoparks Network, contributed to the final event of the presentation of the first 100 geosites.



Reading of the IUGS Zumaia declaration during the final event

in national parks, geoparks, and natural reserves, but many are not. Recognition and visibility of the "First 100" IUGS Geological Heritage Sites can lead to their further appreciation, to their use as educational resources, and, most importantly, to their preservation.

The presentation will start an endeavour to designate geological sites from around the world that are iconic, and recognized by the geoscience community for their impact in understanding the Earth and its history.

These 100 sites have been identified by the International Union of Geological Sciences as being of the highest scientific value. These are sites that were used to develop the science of geology. They are the world's best manifestations of the Earth's geological features and processes and represent fabulous discoveries about the Earth and its history.

The international event concluded with the reading out of the Zumaia Declaration which highlights the importance of the Earth Sciences in addressing the environmental challenges of the 21st century. In the words of Stanley Finney, the IUGS secretary, «the Zumaia Declaration is a statement of the International Union of Geological Sciences about the importance of preserving our geological heritage».

Likewise, «the Zumaia Declaration is the vision that the geological community has of the role of Earth sciences in the way we have to tackle the challenges we face in the future: climate change, water availability and management, access to new minerals, raw materials, energy, etc.», said Asier Hilario, director of the IUGS-International Commission on Geoheritage. "It also has to do with a commitment to basic research, because basic research in geology and in any other science is fundamental to understanding how the system works," added Hilario.

All the information and the book of the First 100 can be consulted in the new www.iugs-geoheritage.org website.

Asier Hilario, flysch@gipuzkoa.eus

16th European Geoparks Conference Nature, Culture and Sustainability in the climate and environmental change



A pictorial overview of significant activities during EGN 2022.

With the 16th European Geoparks Conference and the 46th EGN Coordination Committee Meeting held in the Sesia Val Grande UGGp (Regione Piemonte, Italy), on September 26-30, 2022 the European Geoparks Network returned to a live participatory event. Once again European Geopark members, and delegates from Earth Science institutions were able to meet face-to-face following the critical years with lockdowns due to the Covid-19 pandemic. A well-attended Conference, demonstrated by the large number of participants was also a public event in a Geopark representing an example of the relationship between nature and culture.

The Sesia Val Grande UGGp provides an overview of nature and culture in some of the most attractive tourist areas of the Western Alps, from the Monte

Rosa massif to Lake Maggiore. Its geodiversity includes a 500 million years history of landforms and rock sequences recording processes that formed the Alps and deformed the Earth's lower crust. The Geopark's landscapes also reveal a record of past and present climate changes and their effects from glaciations to global warming.

The Sesia Val Grande geoheritage is of great scientific, economic, and social relevance. The Geopark's motto «Where stone becomes culture» is a recognition of the importance of the local rocks in the cultural landscape and architectural achievements, such as the Milan Cathedral. Moreover the local Walser culture of alpine people evokes memories of the Little Ice Age (1450-1850) and demonstrates a proactive behavior towards climate change, giving the Geopark a sustainable perspective for enhanced tourism, public engagement, and environmental educational activities.

Owing to its great scientific, economic, and social relevance, the Sesia Val Grande UGGp was nominated as the host for the EGN 2022 16th European Geoparks Conference with the general themes of «Nature, Culture and Sustainability in the climate and environmental change». The broad and complex themes highlight the holistic approach necessary in responding to climate change, in which geoparks can play a key role. This was clearly demonstrated during the Conference with the sharing of experiences, good practices, and strategies. These issues were shared by 403 participants from 44 countries, and representatives from 94 UGGps. A total of 158 oral presentations and 72 posters selected by a Scientific Committee made it possible to discuss, at the highest level, the eight themes which corresponded with the general focus of the Conference. These are 1. Aspiring Geoparks; 2. Geoheritage and Geodiversity; 3. Geoparks and Ecological Transition; 4. Geoscience: education and public engagement; 5. Geotourism: exploring good practice and challenges in Geoparks; 6. The World after the pandemic: risks, resilience, and opportunities in Geopark communities; 7. Geoparks in the digital era: data management and communication; 8. Sustainable heritage: products and cultures in Geoparks.

Institutional participation in the opening and closing ceremonies included Sophie Justice, EGN Coordinator; Edoardo Dellarole, Sesia Val Grande UGGp President; Matteo Marnati, Representative of Piemonte Regional Government; Enrico Vicenti, Secretary General UNESCO National Commission

Italy; Ozlem Adiyaman Lopes, UNESCO IGPP Earth Sciences and Geopark section; Guy Martini, UGGp Council General Secretary; Nikolaos Zouros, GGN President; Davide Calcagni (ENI) and Giulia Leonardi (Igor Gorgonzola) representatives of EGN2022 main sponsors; as well as the Silvia Marchionini Mayor of Verbania and Patrizia Balzarini and her students from the Cobiانchi High School.

The honour and the opportunity of hosting the 16th EGN Conference also allowed the Geopark to implement actions aimed at conserving and disseminating knowledge about its geological heritage, and human and cultural values in its territory. In response to the EGN2022 Conference, the Sesia Val Grande UGGp improved its visibility and access to Alpine nature and culture by installing new directional panels and Geopark infographics within several sites in the most attractive tourist area of the Western Alps, from the Monte Rosa massif to Lake Maggiore. Existing communication materials and guided tours have been improved by providing translations in English and signage with the correct UGGp logo. New geological and geomorphological maps, highlighting the Geopark's outstanding geodiversity, have been created for geoscientific and geotourism purposes. Sesia Val Grande Geopark also improved the links between its geology and other UNESCO designated heritages including the Ticino Val Grande Verbano Man and the Biosphere Programme; the Sacri Monti World Heritage Site; the Art of drystone walling, knowledge and techniques and the Alpine intangible cultural heritages. This goal was achieved through dedicated interpretation panels, guided tours and Geopark trails.

The Conference delegates were able to appreciate directly the updated and quality activities of the Geopark's infrastructural and information provision in 13 field trips and in public spaces used for disseminating the contents of the Conference. Satisfaction with the variety of the geology, environments and landscapes was expressed by delegates who participated in the 13 field trips. In this, the highest Geopark in Europe, the delegates experienced an extraordinary

EGN 2022, duration, participants, and activities.

EGN2022 – Final Numbers of the 16th European Geoparks Network Conference and the associated events at the Sesia Val Grande UNESCO Global Geopark	
TIME	PEOPLE
5 days (26-30 September 2022)	44 Nationalities
2 days EGN meeting,	403 Participants (354 paid registrations)
3 EGN conference)	94 UNESCO Global Geoparks at the conference
GEODIVERSITY and HERITAGE	SHARED KNOWLEDGE
13 Field trips	8 main conference topics
35 Visited Geosites,	25 scientific sessions (17 orals, 7 posters)
8 Museums/visitor centers	230 Presentations (158 orals, 72 posters)
24 Experts	14 Workshops (12 EGN/GGN working groups,
31 Geotouristic guides	2 IGCP Project meetings)
318 Participants	1 H2020 Marie Curie PhD final presentation
PUBLIC ENGAGEMENT	
2 Exhibition areas (400m ² indoor, Villa Simonetta, Verbania; 450m ² outdoor, Rectorate, Univ. Torino)	
1 Geofair (17 Geoparks)	
1 Geoscience Exhibit ("Celebrating Geodiversity, Enhancing Geoheritage, Promoting Geotourism")	
2 Artistic installations ("Glacier Trilogy" and "The Geodiversity Forest")	
1600 external visitors	



A geopark stand at the EGN2022 Geofair, in the historical location of the 19th Century Villa Simonetta (19th century), Verbania

geological journey at approximately 3000 m above sea level on the Cimaiegna plateau where an easy, almost horizontal, route has been developed to show the unique rocks, soils and flora at this altitude.

In the middle of one of the greenest Italian valleys it was possible to observe the Sesia Supervolcano, which exploded about 280 million years ago, forming a huge caldera, the remains of which together with its entire plumbing system is clearly visible today. However, also try to imagine when Lake Maggiore was a canyon, a fjord and then a glacier during a trip to discover the most beautiful panorama of the lake and at the same time the wonderful history of Lake Maggiore and its rocks.

The territory of the Geopark, and the National Park within it, is not only important for natural history, biodiversity and its rocks, but also for the human "footprint" on the territory which could be discovered during visits to the Archaeological Museum of Soapstone, the pink marble quarry of the Milan Cathedral, the Antiquarium of Mergozzo, and the historic village of Vogogna. Finally, a novelty for an EGN Conference, a field trip by bicycle! A means of sustainable mobility which led the delegates to visit the valley floor of the Toce and the granites of Montorfano.

The Conference's public participation spaces included two special exhibition areas; the 400 m² indoor space at Villa Simonetta, Verbania and the 450 m² outdoor area at the Rectorate, University of Turin. This facilitated the organization of the Geofair involving 17 geoparks, the Geoscience Exhibit "Celebrating Geodiversity, Enhancing Geoheritage, Promoting Geotourism", and two artistic installations which were appreciated by 1600 external visitors.

The Geopark's landscapes were also presented at the Conference by new audio-visual products, "Glacier Trilogy" and "The Geodiversity Forest", to show an environmental record of past and present climate changes and their effects from glaciations to global warming.

Finally, the sessions involving two UNESCO-IGCP projects (IGCP 726 GEOfood and IGCP 714 3GEO) during the conference complemented the Geopark's motto «Where stone becomes culture» and provided the Geopark with a sustainable perspective for enhanced tourism, public engagement, and environmental educational activities.

At the end of the Conference, Marco Giardino, President of the Scientific Committee of EGN2022, attributed the success of the Conference to the variety of contributions concerning good practices, scientific research and governance delivered by participants from the many geoparks, and also to the successful organization and hospitality provided by the Sesia Val Grande UGGp.

De Hondsrug UNESCO Global Geopark, Netherlands

The European Geoparks Network spring meeting 2022



Opening session of the 45th European Geoparks Coordination Committee Meeting.

(Photo by Iris Sijbom)

The European Geoparks Network's spring meeting was held in the De Hondsrug UGGp between the 27th April to the 30th April. It was a great opportunity to meet each other again after two years of covid restrictions. Most of our guests arrived on a special day, King's Day, to begin the meeting in an already festive atmosphere.

We started with an icebreaker dinner in an old mill. Excellent food, old crafts, and an opportunity to get to know new members. Many of the participants tried to climb the mill. It was rather cold, but

the atmosphere was very warm.

A new way to meet and to interact

The first day started with an opening session in which the 160 participants enjoyed a short film about the Hondsrug area.

Lunch was followed by parallel interactive sessions in which, using situations such as 'creative corners', 'walk and talk', 'ideas-theatre' and 'inspiration tables', we introduced new ways to exchange and discuss developments in our territo-



A coffee break creates opportunities for networking.

(Photo by Iris Sijbom)

Delegates engaging with one of the exhibits in the Hunebed Centre.

(Photo by Iris Sijbom)



ries. Sophie Justice, in chairing the meeting, asked how everyone appreciated this new approach. The participants responded with a resounding positive approval.

In the evening we visited the Hunebed Centre, a really beautiful museum about the Funnel-beaker people who lived here 5000 years ago. We visited the largest megalithic graves on the Hondsrug, experienced the Geopark's exhibition and enjoyed a walking and completely vegan dinner.

On Friday morning we had an open session, with a presentation of the results of the Hondsrug and Terra Vita Interreg project. After a warm welcome by the Deputy of the Province of Drenthe, both films from the Hondsrug and Terra Vita were shown. Other topics discussed during the morning included:

- The Impact of transnational cooperation by the German National UNESCO committee
- Education and sustainable goals.
- The making of The Hondsrug/Hünweg with a very enjoyable promotional video.
- A video Keynote presentation "Healthy Planet – Healthy People", by Dr. E. von Hirschhausen about Climate change and Geoparks.

Following the morning session, it was possible for the participants to play the Geopark's game outdoors. The day ended with dinner and live music, many participants found their way to the dance-floor!

Saturday's fieldtrips provided participants with the choice of experiencing the Van Gogh House, Hunzebos 3D (the landscape with augmented reality), Eko tours (electric buggies), the Tree Crown Path, peat walking, sailing on the old canalboat the Snikke and the use of a diving rod. One group travelled to the Terra Vita UGGp where they visited the Piesberg, the Juniper Grove Trail and walked barefoot, visited the Hi Tec education centre for school classes and walked part of the TERRA.track Ice Age Discovery Trail.

For us it was a great pleasure to organize this meeting and to see so many happy faces of old and new friends.

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 Gretha Roelfs, G.roelfs@drenthe.nl



The walking dinner where delegates enjoy vegan cuisine at the walking dinner.

(Photo by Iris Sijbom)



Walking the Saber-toothed tiger trail in the magical forest of the Hunzebos.



Riding on the Light Railway Piesberg during the visit to the TERRA.vita UGGp.

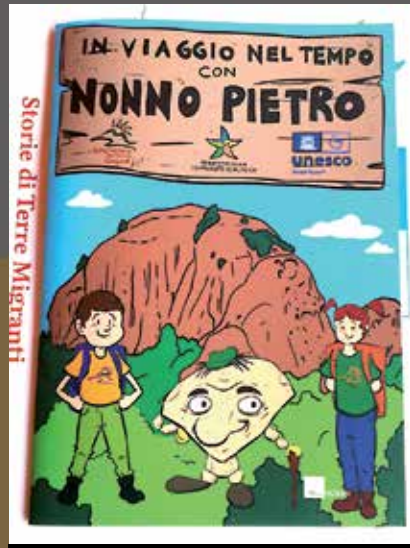


EGN meeting fieldtrip to Terra Vita. Walking barefoot on the Juniper Trail in TERRA.vita UGGp.

The European Geoparks Week 2022



BAKONY-BALATON UGGp, HUNGARY



ASPRMONTE UGGp, ITALY



CUILCAGH LAKELANDS UGGp, IRELAND AND UK



CHELMOS VOURAIKOS UGGp, GREECE



CAUSSES DU QUERCY UGGp, FRANCE



APUAN ALPS UGGp, ITALY



BEIGUA UGGp, ITALY



CHABLAIS UGGp, FRANCE



COPPER COAST UGGp, IRELAND



COUREL MOUNTAINS UGGp, SPAIN



AZORES UGGp, PORTUGAL



BASQUE COAST UGGp, SPAIN



BERGSTRASSE -ODENWALD UGGp, GERMANY



DJERDAP UGGp, SERBIA



EL HIERRO UGGp, SPAIN



ESTRELA UGGp, PORTUGAL



BOHEMIAN PARADISE UGGp, CZECH REPUBLIC



BURREN CLIFFS OF MOHER UGGp, IRELAND



BUZAU LAND UGGp, ROMANIA

The European Geoparks Week, often called the Geoparks Festival, held between late May and early June, is a major item in the annual calendar of events for all European Geoparks. This European-wide festival aims to raise public awareness about Geoparks, their role in conserving the geological heritage, educational activities and how they endeavour to provide economic benefit for the local people by promoting geotourism. It also shows geopark communities that they are part of a wider European Network and Global Network.

Events in the 2022 European Geoparks' programmes involved a variety of activities which, by highlighting the links between the geology, landscape, natural heritage, and cultural heritage informed local communities and the wider public about the holistic nature of the Geopark concept.

During EGN Week 2022, 93 European Geoparks organized 970 activities attracting 137,386 visitors, and 54 online activities with 3,308 participants. Nowadays on-line promotion of the Geoparks on the

web and social media plays an increasingly important role. In addition, 477 press releases, 107,711 programme flyers and 10,456 printed articles were published.

Guided tours provided an opportunity to showcase landscapes and geology along established way-marked trails and also introduced new trails. Ries UGGp delivered five guided tours. Guided tours in TERRA.vita UGGp introduced participants to Carboniferous coal swamp deposits and an erratic field created by glacial surges. However, guided tours are not only restricted to following trails through the landscape. In the Bohemian Paradise UGGp the walk with a geologist from the Academy of Sciences of the Czech Republic introduced participants to the Klokočské Sandstone Rock Town and Betlémské Sandstone Rock Town. The Apuan Alps UGGp combined a guided tour with wild food foraging. A herb walk was well received in the Thuringia Inselberg–Drei Gleichen UGGp. Beigua UGGp's guided walks included a visit to a cheese producer and intro-



GEA NORVEGICA UGGp NORWAY



GEOMÔN UGGp, UK



HAȚEG COUNTRY UGGp, ROMANIA



GREVENA-KOZANI UGGp, GREECE



HOLY CROSS MOUNTAINS UGGp, POLAND



IDRIJA UGGp, SLOVENIA



FAMENNE-ARDENNE UGGp, BELGIUM



KARAWANKEN-KARAVANKE UGGp, AUSTRIA & SLOVENIA



KATLA UGGp, ICELAND



MADONIE UGGp, ITALY



LAS LORAS UGGp SPAIN



LUBERON UGGp, FRANCE



NATURTEJO UGGp, PORTUGAL

duced participants to a profusion of spring blooms. The guided tour in the Swabian Alb UGGp included the exploration of a quarry and an opportunity to experience biodiversity in a forest. Platåbergens UGGp combined local food in its guided tour of the geology. A guided walk through the Dragons nest ended with a meal in the Trollfjell UGGp. In Catalunya Central UGGp about 400 people touched and experienced the history of the rocks of the Geopark in nine field excursions. An interactive geotour along Gaja Stream was one of the most popular activities in Bakony-Balaton Geopark. Madonie UGGp, in addition to inaugurating a new access to a geosite, included an ecological walk and an excursion for disabled participants on the Piano Battaglia. The

North-West Highlands UGGp launched "The Highlands Controversy" a multi-day geotour. Novohrad-Nógrád UGGp organized special thematic guided tours at its geosites and on border crossing trails. Guided tours in Rocca di Cerere UGGp included the Matrice Hill, archaeological area and the special night tour of Rocca di Cerere area and Museum of the Myth. A beautiful landscape can also be appreciated in other exciting ways. In Cuilcagh Lakelands UGGp, EGN Week activities included The Explore Your Geopark by Bike event. The Lauhanvuori UGGp organized a tour of the Geopark's new Two Billion Years Tours cycling route. Gea Norvegica UGGp organized a popular "geo coast life culture and wild life" boat trip. An inaugural hiking and mountain

race over an Ecological Natura 2000 Network area was one of the exciting events in Maestrazgo UGGp. European Geoparks Week provided an opportunity for a variety of group activities, and online programmes. Möllerdall UGGp celebrated its designation as a UNESCO Global Geopark with 200 invited guests while 100 participants applauded Las Loras Geopark's first successful revalidation as a UGGp. Celebrating the extension of the Rokua National Park was the most popular event during EGN Week in Rokua UGGp. The conferences organized by Estrela UGGp, Pollino UGGp and Vikos-Aoos UGGp provided insights concerning the respective geoparks' involvement with SDGs, geopark activities and the cooperation between the Hellenic UGGps and the

Natural Environment & Climate Change Agency respectively. Thematic conferences, delivered by the director, contributed to EGN Week activities in Famenne-Ardenne UGGp. The Causses du Quercy UGGp created a new event, "The Parade of the Causenardes" for the 11th Espédaillac Sheep Festival. In Villuercas-Ibores-Jara UGGp the 1st Forum of Mayors of the Geopark analysed progress and requirements in the Geopark. The workshops held in Sierras Subbéticas UGGp and Vis Archipelago UGGp highlight a professional workshop for making fossil casts, a puppet workshop "Stories in the Subbetic Tethys Sea", and seminars and three field workshops for workers in the touristic sector. Sobrarbe-Pirineos UGGp, in a well-received event, presented the



KULA-SALIHLI UGGp, TURKEY



MAESTRAZGO UGGp, SPAIN



MOLINA ALTO TAJO UGGp, SPAIN



VIS ARCHIPELAGO UGGp, CROATIA



LAUHANVUORI - HEMEENKANGAS UGGp, FINLAND



MAGMA UGGp, NORWAY



NORTH PENNINES AONB UGGp, UK



NORTH WEST HIGHLANDS UGGp, UK



MAIELLA UGGp, ITALY



MASSIF DES BAUGES UGGp, FRANCE



MELLERDALL UGGp, LUXEMBOURG



NOVOHRAD-NAGRID UGGp, SLOVAKIA & HUNGARY



ODSHERRED UGGp, DENMARK



ORE OF THE ALPS UGGp, AUSTRIA

result of research on mining heritage in “Recovering the forgotten memory of the Sobrarbe mines”. The presentation of the book “Adventure Science – Explorers between Alps, Orient and Polar Sea” by Thomas Hofmann, of publications and other books about the Reykjanes Geopark area and the presentation of a book on the Mining Archives of the Geopark were EGN Week highlights in the Ore of the Alps, Reykjanes, and the Tuscan Mining UGGps respectively. A GeoConcert and bringing live music to geosites were special events in Muskau Faltenbogen / Łuk Mużakowa and Salpausselkä UGGps. Participants in the Gymkhana through the city of Seville discovered the relationship between Sierra Norte UGGp and the city. Psiloritis UGGp, together with a local municipality and the Skinakas Observatory of the University of Greece co-organised an open night for the public at the observatory facilities on the summit of Skinakas Mountain. Visitors were invited to watch the excavation of fossils in Geopark Harz. Braunschweiger Land. Ostfalen UGGp. Maestrazgo UGGp provided a training course for the enhancement and promotion of the Art of Dry Stone Walling, Knowledge, and

Techniques. The Geopark was introduced to visitors in the first geology festival in partnership with Kula-Salihli UNESCO UGGp organized in İzmir, Turkey. Origenes UGGp celebrated winning the first award of the Global Geoparks Network’s First Film Festival with “Soona films”, the audio-visual company that produced the Geopark’s promotional video “A journey through time”. In partnership with the Regional Secretariat of the Environment and Climate Change and with the city council of Praia da Vitória Azores UGGp participated in an environmental fair. More than 100 volunteers participated in a great clean-up of the Geoparkea coast in the Basque Coast UGGp. Bergstrasse–Odenwald UGGp celebrated the opening of the International Photo Exhibition, “Exploring new home with my eyes”, which shows the personal view of two refugees from Afghanistan (Lesvos UGGp) and Iran (Bergstrasse–Odenwald UGGp). More than 2000 people discovered Chablais UGGp and the European and Global Geoparks Networks in hands-on workshops. Chelmos Vouraikos UGGp promoted the UGGps of Greece and Cyprus in the international exhibition Gaia’s Memories,

co-organized with the Natural History Museum of Lesvos. The sand dune geomorphology workshop organized by the Copper Coast UGGp introduced a local group to the geodiversity of sand dunes. In El Hierro UGGp EGN Week began with an “open doors” free visit day at the Geological Interpretation Centre of El Pinar and El Hierro Geopark Centre. GeoMôn UGGp honoured and discussed the life and work of Edward and Annie Greenly to celebrate the centenary of Greenly’s geological map of the island. Promotion of the concept of UNESCO Global Geoparks, international partnership as well as the protection, preservation, and sustainable use of geological heritage in geotourism, formed part of the international project meeting in Holy Cross Mountains UGGp. Katla UGGp participated in the summer festivities in Leikskálar in Vik to celebrate Geoweek and the first day of summer. The visit by 50 people to the Low Noise Underground Laboratory in Rustrel provided participants with an insight into hydrogeological research in Luberon UGGp. The new movie about the “geological” birth and management of the Geopark was one of the highlights in the Massif des

Bauges UGGp. Odsherred UGGp marked the 2nd stage of the Tour de France with a life-sized polka dotted mammoth. The new visitor centre “GeoInfo Centre” located in Voćin provided the focus for activities in Papuk UGGp. Styrian Eisenwurzen UGGp celebrated EGN week with an exhibition about the geology and history of the region and a presentation in the GeoVillage Gams about research on regional caves, climate change and the concept of the Anthropocene. During EGN week Vis Archipelago UGGp organized three seminars and three field workshops for workers in the touristic sector. In Vulkaneifel UGGp scientists reported on current research on volcanic activity in the Geopark. At the invitation of the Russian Geographical Society, Yangan-Tau UGGp held an EGN week for residents of Moscow.

Engaging with children and students are regular events during EGN Week. In Aspromonte UGGp EGN Week activities focussed mainly on schoolchildren who learned about the Aspromonte Massif in classroom activities. The Burren and Cliffs of Moher UGGp visited local primary schools to talk about the geology, palaeontology, and hydrology of the



PLATABERGEN UGGp, SWEDEN



POLLINO UGGp, ITALY



TERRAS DE CAVALEIROS UGGp, PORTUGAL



TROLLFJELL UGGp, NORWAY



TUSCAN MINING UGGp, ITALY



PSILORITIS UGGp, GREECE



ROKUA UGGp, FINLAND



SALPAUSSELKA UGGp, FINLAND



SITIA UGGp, GREECE



SOBRARBE-PIRINEOS UGGp, SPAIN



STYRIAN EISENWURZEN UGGp, AUSTRIA



TROODOS UGGp, CYPRUS



VILLUERCAS-IBORES-JARA UGGp, SPAIN



ORIGENES UGGp, SPAIN



PAPUK UGGp, CROATIA



TERRA.vita UGGp, GERMANY



VULKANEIFEL UGGp, GERMANY



YANGAN-TAU UGGp, RUSSIA

Geopark. Buzău Land UGGp introduced students from five schools and high schools to the Geopark's natural and cultural heritage to promote a sense of ownership in the younger generations. Courel Mountains UGGp met with the schoolchildren from all the primary schools in the Geopark. Specialists and volunteers from Djerdap UGGp participated in workshops with pupils from two elementary schools. Schools from the communities of Vateron, Kozani, Kaloneri-Mikrokastrò, and Tsotyli visited the Milea Paleontological Museum, the Poulkos Manor of Siatista, and the Trampantzeio Historic Schoolhouse of Siatista in Grevena-Kozani UGGp. A team of volunteers from Hațeg Country UGGp visited Djerdap UGGp in Serbia where they learned about the Geopark's values and organized educational activities for 160 children. The "Fairy tale hour: an amazing, but true dinosaur story" was one of the successful events in Idrija UGGp. In Karawanken-Karavanke UGGp an event for (pre-school) teachers and a relay race for primary schoolchildren were the most successful activities in EGN Week 2022. The visit from Stavanger Cathedral School was the most successful event in Magma UGGp. Maiella UGGp organized a guided tour of the "Daniela Brescia Botanical Garden" for approximately 50 schoolchildren. Learning to undertake, an activity especially designed for children, conveyed the need to relate to the environment in a responsible way in Molina Alto Tajo UGGp. Children and adults found out about

geoparks around the world during a family event at Bowlees Visitor Centre in the North Pennines AONB and UGGp. Through participating in the local educational community activity «Children play», Sitia UGGp presented the magical world of caves through interactive games. World Children's Day - «Martim goes to School» celebrated the Geopark's mascot and provided an exciting day for children in the Terras de Cavaleiros UGGp. Troodos UGGp used "The Children's Festival" in Kyperounda, to promote the Geoparks's contribution to life in the communities. EGN Week also provides an opportunity for virtual events. The "Biennium for Climate Action" was a webinar in which Portuguese geoparks discussed the work that each geopark developed locally to

achieve the goals in SGD 13. It was presented, in partnership with UNESCO National Commission and Tourism of Portugal by Naturtejo UGGp. GEO-VR was very popular, especially among the younger generation, and is a new and intriguing way to get young people interested in Katla UGGp. The range and response to the activities delivered during EGN Week 2022 is testimony to the success and inventiveness of geoparks in engaging with visitors and the local communities. We look forward to building on these achievements in EGN Week 2023.

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UNESCO WHS Messel Pit Fossil Site, Germany

A new perspective for geoscience transfer by artistic sculptures highlighting a geoheritage site of international importance through collaboration between UNESCO WHS Messel Pit Fossil Site, UNESCO Global Geopark Bergstraße-Odenwald and International Forest Art Darmstadt

Attracting visitors on a regular basis to the Messel Pit WHS Fossil Site, Hesse, Germany, started in 2003. In 2010 a new visitor centre introduced new themes concerning this site. Step by step, public awareness of the site was raised through close collaboration with Bergstrasse Odenwald UGp and through the publication of the results of palaeontological digs by the Hesse State Museum Darmstadt and by the Senckenberg Research Institute. The tremendous volume and extraordinary state of preservation of the fossils discovered (mammals, reptiles, amphibians, birds, fish, insects, and plants), led already in 1995 to the declaration of the Messel Pit Fossil Site as Germany's first natural UNESCO World Heritage Site. Since its initiation the World Heritage Messel Pit not for profit Company has provided regular access to the Messel Pit WHS through guided tours resulting in more than 500.000 visitors to this unique geosite.

In 2017 "The Global Nomadic Art Project" was initiated by the International Forest Art Association in cooperation with Bergstrasse-Odenwald UGp to open this unique treasure to a wider public by establishing links with art. Three events in 2017, 2019 and 2020 involved more than 60 international artists in creating ephemeral works of art in nature. Within the framework of this cooperation, the partners agreed to extend the International Forest Art Trail Darmstadt from 2020 to 2022 to the outdoor area of WHS Messel Pit with 6 art works. By creating an attractive sculpture park in the "Time Garden" of WHS Messel Pit, visitors have direct access after parking their car and entering the Visitor Centre

The six works "Phyton", an art bench by Waltraud Munz-Heiliger, "Fossil Tail" by Roger Rigorth and "Earth history of Messel" canopy by Barbara



Participants in the The "Global Nomadic Art Project".

Breisinghoff. «Three Giant Bird Houses» by the Dutch artist Freddie Beckmans», "Grass Ball in the Tree» by Thomas May and «Torii - gate into another world» by Moritz Dornauf were highly appreciated by the public. These works of art, which refer to topics in the Earth history of Messel Pit, support in a new way a better understanding of this unique locality. The project was financed by the International Forest Art Darmstadt, the Bergstrasse-Odenwald UGp (RURITAGE project), the UNESCO WHS Messel Pit and the Merck company in Darmstadt. This ongoing fruitful collaboration proves that new «trans-thematic-projects» raise public awareness and support the "message on site". In 2022, awareness of the site was enhanced when Messel Pit was one of the First 100 Geoheritage Sites of International Importance, awarded by the International Union of Geosciences (IUGS). Now we look forward that still more visitors enjoy the attractive results of a very successful collaboration.

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"Torii - gate into another time" by Moritz Dornauf,



"Canopy" by Barbara Breisinghoff.



Adamello Brenta UNESCO Global Geopark, Italy

"Be prepared! Good habits for the environment":

A new radio programme by the Adamello Brenta Geopark and Radio Dolomiti with the involvement of local schools.



The Geopark's President, Walter Ferrazza, with Francesca Bertoletti of Radio Dolomiti.

Drawing and sentences from a local primary school: "Don't throw waste in the water, as the fish are dying and then we cannot eat them anymore. The polluted water can be dangerous, also for us and for the entire environment".

"Let's use less packaging"; "We don't have to waste paper, as it's made from trees"; "A good habit not to waste water is to run the washing machine fully loaded": these are only some of the sentences, containing advice on good habits, that students of local schools sent to the Adamello Brenta Geopark at the beginning of the school year in response to the request for their suggestions. Their messages, clear, simple, direct, concrete, were amplified in the radio programme by the local radio station Radio Dolomiti at 07.20 in October and November. Every day the radio promoted a good habit suggested by the school children focussing

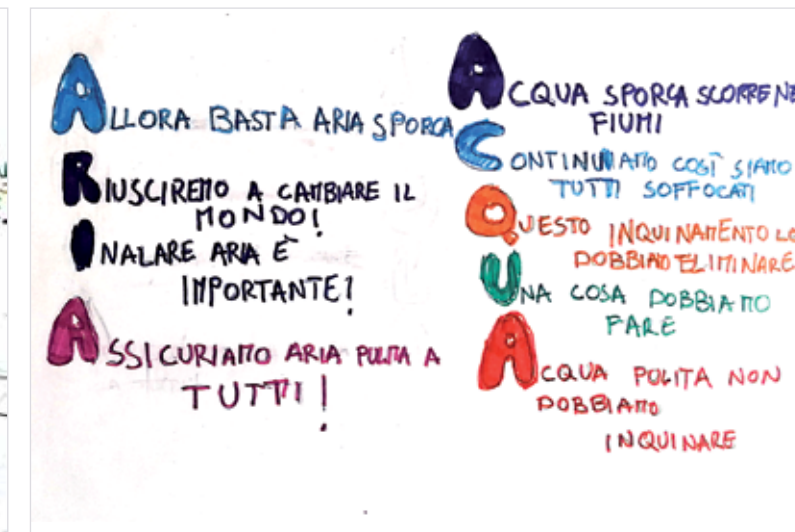
on one of the four elements: water, air, fire, and earth. In total ten actions for each element were promoted, with the participation of the Geopark's President, in 40 short radio transmissions, and in four in-depth evening broadcasts at two weekly intervals. The protagonists in this project are the young residents of the Geopark, who had the opportunity to reflect about the best daily habits that contribute to protecting the environment and to raise their voices to adults in a "call for action".

"With this initiative – says the President Walter Ferrazza – we reinforced the collaboration with Radio Dolomiti, which has supported us on numerous occasions in a very concrete manner in promoting environmental education for local people. In this case, we went into primary and high schools, asking students to send us their ideas and suggestions for protecting the environment. Also, after each live recording, we asked the listeners to send us a picture or a short video on the issue that will be relaunched in the social media, as we previously did with the writing contest "Let's talk about Nature". We would like the dialogue with the territory to continue to grow, within and outside the protected area. The youngsters are the decision makers of the future and we thought it is necessary to listen to their voices to better understand their visions in order to keep these in mind when making the necessary choices for protecting the environment".

If you wish to listen to the daily broadcasts you can find the recordings on: <https://www.pnab.it/il-parco/ente/estote-parati-le-buone-abitudini-per-lambiente/>

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Sentences about air: "Stop with the air pollution, we will succeed in changing the world! Inhaling air is important, let us guarantee clean air for everybody!" Sentences about water: "Dirty water runs in the rivers, if we keep doing this we will all suffocate, we have got to eliminate this pollution, one thing we have to do, we don't have to pollute clean water".



Apuan Alps UNESCO Global Geopark, Italy

Geo and bio education: The Apuan Alps Geopark teams up with the children in its local communities



Children (ages 6-11) attend a lesson on geological hazards and risk prevention during the 2022 International Day on Disaster Risk Reduction.

One of the Apuan Alps' core endeavours is to pursue the further integration of the of the Geopark with the local communities. Among the many initiatives and projects that have taken root in recent years, the didactic and educational activities surrounding the Geopark Farm, have gained traction thanks to their focus on children and youth as the driving force for engagement and community building.

From the start, the Geopark Farm "Giuseppe Nardini" was conceived as an 'open-air experience and knowledge lab' to enrich the lives of the inhabitants of the Apuan ridge. It is both an agricultural centre for the conservation of the Geopark's agricultural biodiversity and a hub for research, dissemination, and learning. Special attention is given to geo and bio education. In fact, numerous workshops and projects are tailored to school-age children from the neighbouring area.

The school of Careggine, where the Geopark Farm is located, is part of a unique joint project with the Apuan Alps UGGp, in which its young pupils engage with the Geopark in a whole host of activities. The farm serves as a subsidiary classroom, where the Geopark staff teaches children about the geological heritage and natural assets of their home through



A class of local school children during grape harvesting at the Geopark Farm.

ad-hoc designed lessons. Special attention is given to concepts about geological processes and correct behaviours for disaster risk prevention and reduction thanks to the support of affiliated universities and research institutes.

Additionally, the children experience what they learn first-hand and hands-on. Activities such as the organic winemaking process (in which the pupils participate from the harvest to the first stages of racking) are integrated with simplified explanations on how identifying the types of soil allows us to ascertain if a wine is truly "local". Or which varieties of fruit, vegetables and arable crops were typical for the area, their characteristics, as well as their traditional use. Very popular among the schoolchildren is the transformation of traditional wheat varieties into bread.

Nourishing the knowledge of the newer generations leads to a stronger bond with their territory, their roots, their fellow Geopark inhabitants but also their elders, who, in turn, share their own, rich wisdom. In this way, Careggine's children represent a kind of "Young Ambassadors" of the Geopark. The aspiration is to create a sustainable "circular Geopark society", in which not only shared knowledge, but also social and individual well-being, economic prosperity and environmental quality are at the core of a new value system arising from a bottom-up participatory process.

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Children's floured hands during the transformation of traditional wheat varieties into bread in the traditional kitchen of the Geopark Farm.



Arouca UNESCO Global Geopark, Portugal

The Biodiversity of Arouca Geopark: a citizen science project



Field trip to observe and identify wild mushrooms in the forest.

(Photo by Avelino Vieira)

Since its foundation in 2008 the AGA-Arouca Geopark Association has, focussed on the promotion and implementation of several educational programmes, with the assumption that heritage conservation and the active involvement of the entire community is one of the keys for the sustainable development of Arouca UNESCO Global Geopark.

In 2020, the constraints imposed by the COVID-19 pandemic resulted in using a virtual format to promote initiatives in the Geopark. The citizen science project "Biodiversity of Arouca Geopark" was launched that year, challenging all citizens to admire, record and share the wildlife they found on their walks or even saw from their house windows.

The enthusiastic response resulted in several hundred observers, and the project is currently still in progress. To-date (October 2022), this project involved the active collaboration of 305 observers resulting in 10,859 observations of 1910 species. Given this involvement, and considering the potential of civic participation in citizen science projects, it was considered relevant to promote a scientific literacy programme called "Biodiversity of Arouca Geopark 12 months/12 themes".



Potentilla montana, endangered species discovery by citizen Carminda Santos.

(Photo by Carminda Santos)

This programme, which started in March 2021 and ended in April 2022 had as its main objectives to enhance the link between specialists and researchers, involved with several groups of living organisms and society, to share their knowledge and to cultivate informed citizens. In order to achieve these goals, the programme involved 12 actions, each one consisting of a webinar and a half-day or full-day field trip.

Selected themes include the exploration of various taxonomic groups and their ecological significance. The following groups considered were: insects, mammals, birds, fish, amphibians, vascular plants, wild mushrooms, mosses and lichens.

The Biodiversity of Arouca Geopark 12 months/12 themes programme involved more than a thousand people, from residents to people from other municipalities in Portugal. The programme contributed to an increase in the awareness of the importance of biodiversity and included the discovery of endangered species such as *Potentilla montana* and *Lilium martagon* by one of the participants. Sharing these observations contributed to the knowledge about existing species (native, exotic, and invasive), their distribution and the definition of adequate management plans for conservation, in the case of native species, or control, in the case of invasive alien species.

Assuming that each citizen can play a role in the knowledge and conservation of the biodiversity and natural values of a territory, the citizen science project and scientific literacy programme, are considered important instruments that allow citizens to approach nature as an active agent in the protection and enhancement of the biodiversity of the Arouca Geopark and with a high potential for replication in other UNESCO Global Geoparks.

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Azores UNESCO Global Geopark, Portugal

Back to the new normal: an opportunity for regional tourism and networking

In the years 2020 and 2021 we all shut down, an unforeseen break! In the Azores UNESCO Global Geopark, as an archipelagic territory in the Atlantic Ocean, we experienced several weeks / months without regular flights and maritime passenger services, including between the islands! Families and friends were separated, businesses and services closed and we all had to adapt to isolation for our own benefit and mental health. During this period, we worked hard, networks were created and new ideas and projects developed. We found alternative ways to communicate and to connect with colleagues and the community. Social networks were created with activities for families, the promotion of heritage, communication and online events.

It was an opportunity to balance and rethink our work, to reinforce working groups, to plan new activities and to promote the natural and cultural heritage of the territory at a global level, but with a broad focus on, and commitment to our community.

During this time, nature was taking its course, regenerating in response to reduced anthropic pressures. Our volcanoes were breathing. Slowly, the day-to-day routine began to change and we could finally return to the much needed contact with others and nature. This introspective period allowed Azoreans to connect with the territory, to rediscover their islands and their natural heritage. The number of international flights had not yet returned to normal and we were encouraged to explore the landscapes and heritage of the other islands. During the period of transition to the new normal, with the reduction in international flights, internal tourism was more accessible, encouraged and promoted, so the discovery of our archipelago and Geopark was the stimulus for a healthy lifestyle. The emblematic places from neighboring islands became more accessible. During this period Azoreans were tourists in their own archipelago, they climbed Pico Mountain, visited the lagoons and waterfalls of Flores, explored the stratovolcanoes and fumarolic fields of São Miguel, walked in the fajãs of São Jorge, dived in the beaches of Santa Maria, visited the volcano and lighthouse of Capelinhos in Faial, descended into the volcanic caves in Terceira and Graciosa and visited the volcanic island in Corvo! All these experiences being enriched by local gastronomy and traditions.

Looking back, and despite all the privation and fear, we are sure that we all learned important lessons and were inspired to do greater things. This new normal is filled with different solutions and tools that, in promoting the Geopark to our community and to the world more effectively, bring us more closely together. Providing online activities to all islands, promoting online tours to interpretive centres and Geosites, made our message more effective and accessible to a wider public.



We learned, we are stronger and we rediscovered our territory – 9 islands, 1 Geopark, the Azores UNESCO Global Geopark.

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Families had the chance to rediscover their territory - Geosite Matias Simão spatter cone.



Bakony–Balaton UNESCO Global Geopark, Hungary

The wonderful world of the Nagy-berek marshland



The Fehérvíz Bog Nature Conservation Area, one of the semi-natural wetlands.

(Photo by Zoltán Tuba)

A new visitor centre opened last year near Fonyód, on the southern shore of Lake Balaton. The aim of the visitor centre is to present the unique littoral wetlands (local term for them: 'berek') that once surrounded Lake Balaton. The bogs have almost disappeared as a consequence of human activities. The fate of these areas is intertwined with Lake Balaton, which is of major importance in Hungary, especially for tourism.

The visitor centre focuses on the Nagy-berek ('Great Berek'), which still shows traces of the once extensive marshland. The main attraction is an exhibition on the geological history of the area, the evolution of Lake Balaton, the wildlife of the area and how man has shaped this landscape. The staff introduces visitors to the world of the 'berek' through presentations, activities, and guided tours.

Five thousand years ago, our ancestors were already familiar with an image of Lake Balaton which survived until the middle of the 19th century. The shape of the lake was much the same as today. The most striking difference between the lake then and now is the presence of the 'berek' (marshlands), some of which are still present in patches. The two largest of these are the Kis-Balaton ('Small Balaton') and the Nagy-berek, which once formed an integral whole with Lake Balaton. The 'berek' of the southern shore of Lake Balaton were created by the prevailing north-westerly winds. The waves generated by the winds created barriers (baymouth bars), behind which the 'berek' were formed.

The restless, landscape-shaping man has not only regulated Lake Balaton and the waters that feed it,

but also the 'berek', in order to make them cultivable and exploitable. The owners of these areas succeeded in regulating Lake Balaton by lowering the water level, largely with public money. Their efforts were crowned with success. In 1821 they dismantled one and later several water mills in and around Siófok. Their dams had prevented the waters of Lake Balaton from flowing down the Sió (a largely artificial watercourse capable of draining the water from Lake Balaton into the Danube). The removal of the dams lowered the water level of the lake and thus the 'berek' by about 2.5 metres. This marked the beginning of the regulation of Lake Balaton, which irreversibly sealed the fate of the 'berek' and the lake. Later, in 1861, a railway was built on the southern shore. The railway company that invested in the project, in order to protect the railway line and in cooperation with the growing and expanding beach associations, succeeded in building the Sió Canal, which could be operated in a regulated manner, and led to a further reduction in the water level of Lake Balaton and the 'berek'. At the same time, special associations were established, whose work over the decades left only a trace of the former wetlands. Today's Nagy-berek, with its drained landscape, although still enchanting and rich in treasures, are the work of man. The Fehérvíz Bog Nature Conservation Area in the south and small patches of the 'berek' that remain in places indicate the amazing marshland that once lay here.

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The small visitor centre is a modern building that blends into the landscape.

(Photo by Zsolt Melczer)



The multisensory exhibition presents both the natural and cultural heritage of the area, in line with the holistic approach of geoparks.

(Photo by Zsolt Melczer)

Parco del Beigua UNESCO Global Geopark, Italy Discover Beigua Geopark with all your senses



Enjoy the flavours and appreciate the geodiversity of Beigua Geopark's spectacular landscape.

Welcome to the Beigua UNESCO Global Geopark! A land of contrasts, enclosed between the mountains and the sea, characterized by an extraordinary geodiversity and one of the richest heritages of biodiversity in the Liguria Region.

This range of biodiversity can be felt with all the senses, including taste.

The Gustosi per natura («Tasty by nature») label, awarded to fresh and finished products of local origin produced in the Beigua Geopark Municipalities, emphasizes the connection between the protected area and local food processing. It enhances their authenticity and seasonality and recognizes their important (key) role in enriching the biodiversity of our territory.

Cheeses, cured meats, bakery products, jams, honey and all the other unique flavours of Beigua become ambassadors of biodiversity and keepers of ancient local traditions.

The label recognises the role of the activities of the agrifood chain not only as an engine for the development of the local community and tourism, but also and above all as guardians of environmental values.

Thanks to human activity, performed in harmony and balance with nature, the management and preservation of the territory is ensured. A form of active protection of biodiversity that, through care of the environment, cultivation and pasture management, preserves intact the habitats of the species that live, feed and breed in

this area.

A taste of Gustosi per natura is a taste of Beigua Geopark, with its different panoramas of sea and mountains, delicate blooms, and rugged rocks.

The coarseness of stone-ground flour, the milky scent of a fresh cheese, the golden sweetness of honey, the fragrance of a freshly baked amaretto. These are just some of the sensory experiences delivered in the programme of the producers of the Beigua Geopark food chain.

Come and discover the small quality production in farms and micro-factories, historic family businesses that have been able to innovate over time, and new businesses recently born, but quickly renowned for the originality of their products.

Enter the workshops and ovens, stroll through the pastures, and browse the stables. You will discover the beauty of a land that you can admire with your eyes, but also enjoy with your palate!

On the Geopark's website you can find the list of the producers labelled Gustosi per natura and in our Visitor Centre you can take the new booklet presenting the local delicacies. The products can be purchased directly in the farm, in some cases online or at the local farmers' markets, and can be found in the area's small shops that focus on small-scale production.

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Grazing goats.

Gustosi per natura, a taste of Beigua Geopark.



Bergstrasse-Odenwald UNESCO Global Geopark, Germany

Bergstrasse-Odenwald Geopark: "Climate Heroes 2.0" – Climate protection starts on your plate



The interview about food and climate change, which we were licenced to use from the German newspaper DIE ZEIT.

Our "Climate Heroes" project, which we started in 2021, has been further developed by integrating our experiences on the spot and by introducing new thematic aspects.

The citizen science project focusses on education about climate change, climate protection measures and the possibility to get involved through your daily activities. This year, the connection between climate change, regional food production and our consumption was the topic in three workshops. The first workshop gave a brief introduction to the complex issue of climate change and how it is likely to affect our present and future. We were careful not to be dogmatic in the display of advice for daily life (i. e. „you should not...“, „it is not good to...“), but rather create an interest in the topic itself by highlighting certain scientific relationships in the discussion of climate change. This was accompanied by presentations from the Geopark Rangers and a regional Food Association ("Genialregional").

We also motivated participants to think about their own long-standing food traditions by providing coffee-like drinks made from lupines (a lot of people could not tell the difference from real coffee) and insect-snacks,

A Mentimeter poll showing the parts of life where people were most concerned about climate protection measures.



made from roasted crickets in contrast to beef, the main contributor to CO2 emissions in food production worldwide.

Our very good experiences with Mentimeter, a live audience questionnaire tool, led us to use this for the whole presentation, asking the participants quiz questions as well as for their personal opinions. Activating and engaging the audience has proved more successful in creating a lasting awareness for the issue, than plain advice and bullet-point like check lists.

For the second workshop we invited Julian Senn, a scientist from the University of Heidelberg, who gave a presentation about regional food versus imported food with the motto "Apple or Avocado?"

In combination with a so-called "Walk of Science" with large posters of infographics and a big newspaper interview on white boards in the back of the assembly hall, we offered additional options for exchanges between the participants. This was well received by the audience, with people mixing and discussing before and after the presentation.

The third workshop will be a podium discussion with representatives from local farming, local economy, sciences (sustainability & life cycle management) and "Genialregional". They will exchange their experiences related to the question "how much steak can the climate tolerate"?

The three-workshop format is suitable for local communities and can also be used for single events.

As a next step, it is intended to modify the Climate Heroes project for schools to be integrated into project weeks and activity days.

The project creates a series of benefits including: understandable scientific information about climate change for everybody, connecting with the participants' everyday life including useful advice, regional networking and finally, supporting SDG 13 in the frame of the UN's 2030 Agenda for Sustainable Development.

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Our Geopark booth with SDG-Cubes and the lupine coffee in the middle.

Burren and Cliffs of Moher UNESCO Global Geopark, Ireland

Reducing energy use: adapting to the new normal in the Burren and Cliffs of Moher Geopark

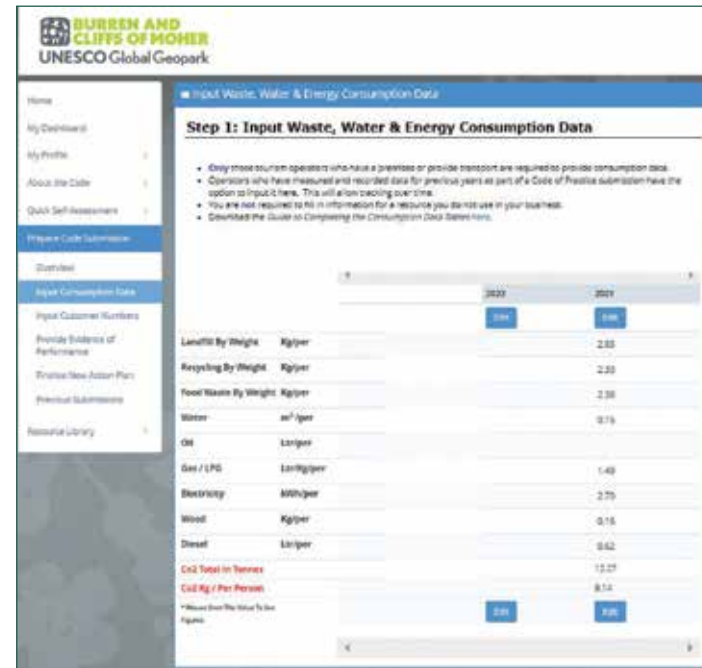


There have been a few major international events that have changed the way tourism businesses operate in the Burren in recent years. Brexit, the Covid pandemic and the war in Ukraine have all affected the businesses in different ways and they have had to learn to adapt to new ways of doing business to survive. Most recently, the war in Ukraine has resulted in significant increases in energy costs for the businesses, as well as for the people who visit the Geopark.

The new normal is to reduce energy usage. There are an increasing number of governmental, local authority and international campaigns aimed at encouraging people to reduce their energy usage. UNESCO Global Geoparks are well positioned to play a role in further encouraging communities in 46 countries around the world to adapt to this new normal.

What is becoming the new normal for society at large has been normal for the tourism businesses in the Burren and Cliffs of Moher UGGp since 2016 when our Geopark Code of Practice was introduced.

The Geopark Code of Practice (which encompasses a range of conservation activities) has now been adopted by 68 local tourism businesses in the Burren Ecotourism Network in the Geopark. This Code of Practice gives the businesses a system and set of tools to track their energy usage. No change is possible without knowing current usage patterns. The online system allows businesses to record energy, waste and water usage throughout the year. By combining the data from these 77 businesses we can track the energy usage across a significant sector of the Geopark. External evaluators analyse this growing bank of data and provide clear feedback to the group as well as to individual businesses. The system was



designed through consultation with the members of the network and adopting the Code of Practice is a pre-requisite for joining the network.

Facing mounting energy costs and global warming can create anxiety, however by working together as a group we can share our experiences, learn from each other, and gain the confidence to move forward in the 'New Normal'.

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Screenshot of the online Burren and Cliffs of Moher Geopark Code of Practice for monitoring waste, water, and energy consumption across the 77 members of the Burren Ecotourism Network.



New solar panels installed on the roof of Slieve Elva Bed and Breakfast, one of the 77 members of the Burren Ecotourism Network who have adopted the Geopark Code of Practice.



Central Catalonia UNESCO Global Geopark, Spain

A new web app to discover the geodiversity and its links to the natural and cultural heritage



Natural site known as the Russian Mountains (Muntanyes Russes in Catalan). On the top of the badlands of the marls from the Eocene sea that once covered the area, there is a castle that is part of the newly restored infrastructure.

One of the changes resulting from the COVID-19 pandemic has been the desire to experience again, or perhaps discover for the first time, the sensations of experiencing life close to home. To regain contact with our own heritage that, due to familiarity, was taken for granted.

In this new context, the geoparks can provide a solution. We can provide a new way of understanding the landscape and getting to know our history more deeply. From the Central Catalonia UGGp, we have taken advantage of a project to create a new geotourism infrastructure to enhance the discovery of the environment, from all points of view, through new technologies.

The Geopark has restored several infrastructures from a 1.6M€ funded project co-financed by the European Regional Development Fund of Catalonia 2014-2020, and by the Government of Catalonia, the Barcelona Province Council and the local Councils.

We have developed a web app as a tool for promoting these new facilities to visitors. Nowadays, this app allows users to discover up to 15 sites and experience interactive trails that connect them with villages or other aspects of the cultural and natural heritage.

The web app allows the public to follow an interactive route using their mobile devices. As soon as people start walking from the meeting point, texts and informative messages are displayed on the mobile device thanks to geopositioning as the user approaches the sites of interest. The game uses quiz questions, identification of rocks, architectural and natural elements and landscapes, etc. The app also has informative capsules and provides clues to solve the riddles. The web app also contains general information about geology, history and the main geotouristic attractions of the territory.

At the beginning of each trail, users receive information about the prize, a virtual mineral or rock that is representative of the geology of the municipality. By collecting all of them, visitors can have an idea of the general geodiversity of the Geopark. Once the users finish all the trails, they receive a final reward of a discount at the visitor centres. Soon, official partners of the Geopark will be able to join this application, offering discounts or special promotions for the participants that have finished the game.

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Landing page for the adventure in the Russian Mountains, in the town of Sant Vicenç de Castellet.



Playing this game, visitors can collect the ambience of the territory, emotions, and virtual prizes and also use the scores to compete with their families and friends.

Causses du Quercy UNESCO Global Geopark, France Bringing a fossil to life in the Causses du Quercy Geopark

The Chalicothere is an extinct animal that lived in Europe between 33 and 27 million years ago. It resembles a large tapir or a hornless rhinoceros and is rare in the fossil record. An almost complete skull was discovered in the phosphate caves of the Quercy, in the heart of the Causses du Quercy UNESCO global Geopark. While visiting the Cloup d'Aural geosite, Virginie Dagault-Revel, a teacher in applied arts and stop motion, had the idea of using this specimen as a working theme for her 2nd year students in the Diplôme National des Métiers d'Art et du Design (National Diploma of Art and Design), specializing in animation. With the involvement of Marc Azéma, an archaeologist specialized in the study of prehistoric art, Thierry Pélassié, geologist at the Causses du Quercy Geopark and at that time curator of the Geological Reserve of the Lot and Maeva Orliac, a palaeontologist at the Institute of Evolutionary Sciences of Montpellier, 14 students created their own representations of the animal which they integrated into various scenarios, based on 2D animations, bringing the animal to life in a variety of contexts.

The students had to conceive and produce a short fictional animated feature of about one to two minutes on the Chalicothere between three narrative schemes: past, present or future. The project process involved the acquisition of knowledge, experimentation, writing a script and a note of intent, character design, concept art, storyboarding, animation, sound recording and editing.

At the end of this three month project, seven videos of about two minutes were produced. They were presented to the public, at the Cloup d'Aural Geosite, during the European Heritage Days in September 2022. They can be seen on the Saint Etienne de Cahors High School website in the DNMADE cinema animation student work tab and on the Geopark's youtube channel, <https://www.youtube.com/PNRCQ>.

This project presents an original way to give life to extinct species and to promote and appreciate the palaeontological heritage of our Geopark!

The Geopark would like to thank all the participants in this innovative project, in particular all the students who rose to the challenge and created an original vision of our geoheritage: Arregui Emma, Bessonnet Fanny, Blanchard Olivia, Brebion Tom, Chevalier Lou Mona, Franchet Gwennoline, Guichard Joseph, Guitard Julie, Hernandez Salomé, Kieger Jules, Meissonnier Sinoë, Nicolle Laurène, Osete Lou, Ruault Sigrid, Savarese Lauryn, Valderrama Aguado Anita.

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Copper Coast UNESCO Global Geopark, Ireland Geology Web Tours in the Copper Coast Geopark



Screenshot from
Virtual Tour
(Tankardstown)

During 2021-22, the Copper Coast UNESCO Global Geopark team and a research group from the iCrag Institute (Irish Centre for Research in Applied Geosciences) used state of the art drone technology to simultaneously analyse the geotechnical stability at one of its geosites and to produce a virtual reality geotour.

The idea for the virtual tour of the Copper Coast was inspired by a Google Street View poll that placed the Copper Coast Geological Garden (in Bunmahon) as the 10th most visited outdoor museum in Ireland in 2021.

Using a drone with a 360° camera, stability analysis software and VR technology, multiple images were taken of an overhanging formation of Devonian conglomerate at Ballydowane Geosite.

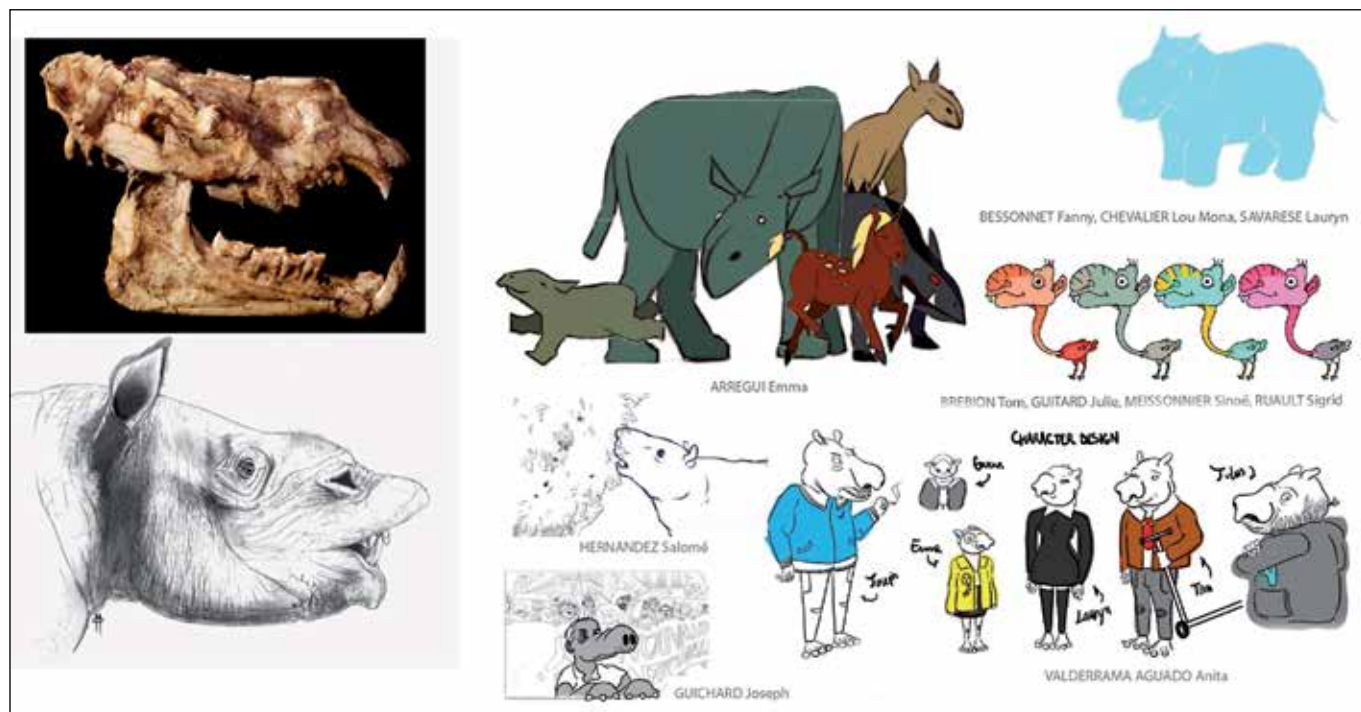
Working with the Geotechnics and Structural Health research group in University College Cork, the drone

imagery from two adjacent coastal geosites, at Tankardstown/Knockmahon Cliffs and Stage Cove/Tra na mbo, was combined with the Ballydowane drone imagery, to create a virtual reality educational tool and an interactive experience in the Copper Coast Visitor Centre.

Images were processed into high quality 360° panoramas using Kuula software. Five virtual reality headsets have been purchased to display the tour in the Geopark's visitor centre. With further investment this public outreach tool should also become a tourist experience.

Additional content and images, with interactive elements about geology and mining heritage, have been included in the VR tour, resulting in 11 stops within the three geosites along the Copper Coast Geopark coastline.

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On the left the skull and reconstruction of Chalicothere. (© Maeva Orliac).
On the right Cadurcothere transformed by the students in the videos.



English Riviera UNESCO Global Geopark, UK

The English Riviera Geopark Marks Earth Hour and Earth Day



The English Riviera UNESCO Global Geopark is located in one of the most popular seaside resorts in the UK and as such has its own unique challenges when it comes to climate change and protecting biodiversity. It was decided that Earth Day was the ideal opportunity to launch both a new Environmental Policy and Marine User Policy on the back of declaring a Climate Emergency.

The Environmental Policy will enable the Geopark, as well as its partners and visitors to lead by example, reduce environmental impacts, enhance and protect the environment, ecology and geology of our naturally inspiring bay. It provides a framework built upon the UN's Sustainable Development Goals for tackling climate change locally, empowering staff, partners and visitors to help address the climate and ecological emergency.

With more than a third of English Riviera UNESCO Global Geopark being marine and with the sheltered limestone and sandstone cliffs and shores as home to some of the key Geopark sites, the introduction of a Marine Use Policy is vital to help protect our internationally recognised geology, incredibly diverse and important habitats and the exceptional array of species who live in and around our waters.

Geopark Partners and Associate Partners met at Goodrington Sands on Earth Day (April 22) to mark the launch of the policies, ahead of a beach clean. The Geopark is already committed to supporting the 17 UN's Sustainable Development Goals, while the launch of the policies also coincided with Torbay Council's commitment to create a Carbon Neutral Torbay by 2030.

A fun, educational and visually dynamic event was also organized for international Earth Hour on 26 March, with more than 800 people taking part. Commissioned by Torbay Council and the Geopark, participants were encouraged to reflect on the climate emergency, switch off their lights at home



A stilt walker on the lantern procession.

and come and enjoy an evening of 'unplugged' entertainment on Torre Abbey Sands.

Earth Hour Torbay saw people meeting to sign a climate pledge, before the main seafront festoon lights were turned off and hundreds joined a recycled, homemade lantern procession down to the beach, led by drummers and stilt walkers. Artwork featuring a giant lightbulb and the words "Earth Hour Torbay" had been created earlier in the day by a local sand artist. It was then illuminated with more than 800 candles in jars.

Whilst the promenade provided an accessible viewing point, many enjoyed the entertainment including light and fire juggling by circus performers and live shanty music on the beach itself. The evening finished with more drumming before the glass jars were collected to be recycled before the tide came in. The evening proved so popular that an even larger event is planned for next year.

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Fire juggling on the beach by a circus performer.

Illumination of the giant light bulb by more than 800 candles in jars.



Estrela UNESCO Global Geopark, Portugal

Two years of the Estrela UNESCO Global Geopark



Delivering the outdoor educational programmes.

(© Lucas Cezar)

The designation of Estrela as a UNESCO Global Geopark (Estrela UGGp), was an important milestone for this territory. It rewarded the hard work devoted to achieving this goal, and also added to the responsibilities that come with this designation.

Despite the pandemic that affected the entire world, much has been achieved in different areas to assert the UNESCO Global Geopark (UGGp) brand during these last two years. Twenty new interpretative panels were installed promoting Geoconservation, Geoheritage and the Environment. Seven new projects emphasising the value of geoheritage were implemented. The communities helped to identify twenty new geosites, and the Geopark received a Geoconservation award from Pro-GEO Portugal. Regarding Education and Training, there were 305 indoor educational programmes with 7404 participants, and 297 outdoor educational programmes with 1919 participants. Eleven training courses with 348 participants were delivered; the project School Year for Climate Action was accessed by 613 students and the digital platform Estrela Educa was implemented. Promotion, Communication and Dissemination was marked by nine national and international fairs; eight promotional videos; five Video and Photography workshops with 40 participants; two awards were achieved with the documentary "Estrela Geopark – The identity of a territory"; 15 Estrela Geopark Conferences were promoted. Tourism and Sustainable Development was promoted through the creation of the G.U.I.A. web and app platform; the Estrela UGGp partners network now comprises 19 institutional partners, 78 business partners and 10 local producers. The GEOFood network helped to promote 12 partners, four restaurants and 24

Introducing one of the new Interpretative panels.

(© Emanuel de Castro)



products. The Estrela Geopark Great Route was initiated, and will consist of more than 800 km of pedestrian and cycling trails. The Reforest Card was designed to help foster the local economy and environmental rehabilitation; The Geopark achieved two National Tourism Awards. Concerning Science and Research, 25 research projects with 90 research partners were developed; 32 articles were published; 12 national and international congresses were attended; the project Biennium for Climate Action in the Portuguese Geoparks was implemented; the activities "Walking with Science" was accessed by 350 participants. The Estrela UGGp leads the IGCP 736: SEDSNet project and is a partner in the projects IGCP 714 and IGCP 726. Finally, regarding Management, seven projects to foster the strategy for the Estrela UGGp were approved; eight internships from seven national and international institutions were hosted, as well as three international volunteers. Still on this subject, the Geopark Headquarters were changed to the "Centro de Energia Viva de Montanha", creating a closer connection between the people and the stakeholders.

As discussed, all of the initiatives developed record the immense amount of work that has helped cement the UGGp brand. However, geoparks are constantly changing territories, so the number of achievements during the last two years are not the final product but the motivation for progressing the Estrela UGGp forward into the future.

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Participants in the Walking with Science programme.

(© Leo Rosa)

Famenne-Ardenne UNESCO Global Geopark, Belgium

Discovering the "... Geotrail" in Famenne-Ardenne Geopark



Tourist operators visit the Brasserie St Monon.

(© Geopark Famenne-Ardenne)

Following almost two years of restrictions during the covid 19 crisis we decided to create the meeting days «Discovering the "... Geotrail" to meet face to face with the local tourist operators.

The concept is simple, three to four times a year, we invite local tourism operators (accommodation providers, local producers, restaurant owners, tourist information office staff, tourist attractions) to discover one of our Geotrails with us. The walk is guided and animated by the Geopark team. Geology, history, biodiversity, local resources, handicrafts, folklore and more - the whole local heritage is covered.

These days were created and established at the beginning of 2022 to meet several objectives. Firstly, we wanted to restore face to face contact with our partners. What could be more pleasant than to do so during a friendly walk, immersed in our Geopark. It also seemed important to us that, as the first ambassadors of our Geopark, that these operators discover and get to know the tourist products we offer so that they can promote them to the inhabitants and visitors to the territory. Secondly, in order to ensure that everyone has access to education, information and awareness, it seemed important to us that this event should be repeated. We therefore plan to perpetuate these meeting and exchange days by organizing a «discovery tour» of the riches of the local resources in each municipality in our

territory.

This event, which is free and open to all operators, also aims to raise awareness among local tourism professionals on various themes such as the preservation and restoration of ecosystems, the fight against climate change through geological examples, or sustainable consumption and production methods. The lunch break is an opportunity to highlight one of our local producers or partners. The latter will have the opportunity to present its products or its project. It is also an opportunity to remind participants that it is important to promote solidarity between farmers, producers, citizens and the Earth in order to meet the needs of all while respecting the autonomy of each. We also take advantage of this moment to remind them of one of our main missions, to contribute to the dynamism of the economy of our partners and of the rural areas in general, by creating or accompanying diversified projects that are part of short circuits, direct sales or sustainable development systems.

These days are very much appreciated by the tourist operators. It is a moment of exchange and sharing which, following the health events that we have experienced, has become valuable and all the more constructive.

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Tourist operators experience the resources in the small town of Hotton.

(© Geopark Famenne-Ardenne)



Following a trail in Lesse Resteigne, Famenne-Ardenne UGGp.

(© Geopark Famenne-Ardenne)



Hateg UNESCO Global Geopark, Romania

A Self-portrait of Petra, a young volunteer in Hațeg Geopark



Building the House of Volcanoes, 2015.

I am Petra from Hațeg, Romania and I have been a volunteer for the Geopark for seven years and spent my time in high school volunteering at the Hațeg UGGp. I joined every event and showed up to help in every project. In exchange, I acquired a lot of good memories, knowledge and also developed a 7th sense – a desire to help my community and people around me. Our Geopark had a huge impact on us, providing us with opportunities to grow. After gaining a certain experience, there was the next level, becoming an ambassador for the Geopark, a representative and a leader for a new generation of volunteers.

For me and my friends, volunteering at the Hațeg UGGp meant quality time spent together, while learning and doing things that matter to our community. It was fun getting home after a day full of activities and telling our families what a day we just had! Our time was well spent with one day learning about sustainable development in our community, and another day "Make your own wacky salad" workshop. There were also, extremely special days when we had to represent our Geopark as youth ambassadors.

The way things developed reminds me of an ecosystem of good values in which volunteering taught us more than basic principles; it created a bond between all of us and raised our awareness about the Geopark's

main goal. Geoparks are trying to bring people together, grow communities, and inspire them to value their heritage. They are not just about promoting rocks or fossils, they are about people and the place where they belong. They are about providing people with reasons to invest their time and resources in the places where they were born. They are about attracting kids and teenagers to be more curious about nature and to introduce them to new ways of gaining knowledge, in creative ways, through non-formal education and exposing them to cultural exchanges.

My backpack of memories is not full yet, and I am not going to close it for a while, because I have gone up another level. I am the Romanian Representative in the UNESCO Global Geoparks Youth Forum and I feel that there are so many things that I want to accomplish. I truly believe that my mission at this time is to empower others to invest their time volunteering in their Geoparks. But firstly, to do that, we have to influence them and give them reasons to make this decision. I am more than thankful that my team is always here supporting me. I hope that someday I will make them proud by being a good leader, at least as far as possible to follow in their footsteps.

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Enjoying the company with the Hațeg Country Geopark Youth Ambassadors, 2017.



Attending the 8th International Conference on UNESCO Global Geoparks in Adamello Brenta UGGp, 2018.

Idrija UNESCO Global Geopark, Slovenia

Idrija Breakfast – a selection of tastes combined in a delicious meal for an excellent start to the day



In Idrija UNESCO Global Geopark, a new product called IDRIJA BREAKFAST consisting of delicacies created by nature and the people of Idrija was designed. Delicious dairy and meat products, honey, and tea follow the spirit of tradition and local know-how. The Idrija Selected certificate of excellence ensures that these selected delicacies are of high quality and locally sourced.

The Idrija Breakfast is designed as an additional offer for tourist accommodations in our Geopark, which do not serve their own breakfast. The main purpose of the product is to offer the guests a taste of local products and to encourage them to visit local producers in person, to see their farms and stores, or the experiences they provide. Furthermore, the Idrija Breakfast can also be a perfect gift.

It is a good example of connecting local providers in a joint project, which promotes the connections between local food and geological heritage, contributing to the development of the local economy and to short supply chains. Through the promotion of the breakfast, the local products and producers can become more recognizable.

The tasty Idrija Breakfast for two persons consists of:

- fruit and plain yoghurt, cheese, and butter from three local farmers who supplemented their primary activity of cattle farming with processing milk into various delicious dairy products,
- minced lard, "zašink" (dried pork neck), pressed bacon and bread prepared by an agricultural



The Idrija Selected certificate of excellence ensures that selected delicacies in Idrija breakfast are of high quality and locally sourced.



cooperative who devote special attention to the quality of goods in their stores. Their "home corners" therefore offer a rich assortment of products sourced in the Idrija region. Their meat products follow traditional procedures of meat processing and are made from highest-quality meat of local geographical origin,

- honey from the local beekeepers who received multiple awards for their product,
- herbal tea from the House of Herbs situated 1000 m above sea level, where the owner pursues her career inspired by the love of nature. Using traditional manual processes which she learnt from her grandmothers and great-grandmothers, she extracts beneficial "essences" from herbs and transforms them into herbal preparations and products,
- seasonal fruit from Slovenia

The Idrija Breakfast can be bought on-line or in the tourist office. It is prepared by Kmetijsko Gozdarska Zadruga Idrija and can be collected in their local grocery stores.

The breakfast comes with a gift, a family ticket to the Idrija UNESCO Global Geopark Visitor Centre exhibition Written in Rocks with an audio guide.

Our plans for the future are to develop vegetarian and family versions of the breakfast. We would also like to include local culinary products in a picnic basket as an additional offer to the 23 hiking and biking trails in the Geopark.

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Idrija breakfast - select tastes of Idrija combined in a delicious meal for an excellent start of the day.

(Photo by Bojan Tavčar)

Delicious dairy and meat products, honey and tea follow the spirit of tradition and local know-how.
(Photo by Bojan Tavčar)



Harz • Braunschweiger Land • Ostfalen

UNESCO Global Geopark, Germany

Play and discover Geopark Harz • Braunschweiger Land • Ostfalen



1. Presentation of the Geopark Card Game in a primary school.

(Photo by Esther Czymoch)

During the height of the global pandemic, people were forced to stay at home. For a long time, travelling was not possible, thus people re-discovered the beauty of nature close to home. Hiking became more popular than ever. But which are the best places to discover? And what combats boredom on rainy days when you stay indoors? The UNESCO-Geopark's answer for kids was the new Geopark Card Game. The Geopark staff, together with a student of games conception at a local university, invented a new card game especially for the Geopark Harz • Braunschweiger Land • Ostfalen. With the card game, the youngest residents of the Geopark are able to get to know the natural and cultural uniqueness of their region in a playful way and even from home. On 54 colorful playing cards specific buildings and geotopes, that are located in the Geopark, are shown. Collecting as many of those cards with different rock types is essential to win the exciting strategy game. To end the game, one player has to collect cards with six different rock types.

The winner is the player with the most accumulated points in her or his collection. Buildings earn the player three points, while geotopes earn one point. In order to construct a building, the player must first go to the mine to collect resources. With this, kids also learn a little bit about the history of mining in the Harz region. Event cards, illustrated with the Geopark mascots Josephine and Konrad and their friends, influence the course of the game and can turn it in the twinkling of an eye. For example, the meteor destroys all the players' buildings, the witch Watelinde Blocksberga is able to see the future and the treasure huntress Josephine can steal cards from other players. The accompanying booklet provides interesting information about the Geopark and different types of rocks, so players can also be well prepared for real journeys of discovery in the Geopark. The games are distributed free of charge to the pupils of year four in primary schools in the Geopark area. The distribution is connected to an interactive game play demonstration by one of the Geoparks geologists. The children are able to marvel at real specimens of each of the nine rocks presented in the game, from well-known rocks like sandstone to lesser-known rocks like rhyolite. The campaign is very popular in the area and motivates not only children but also their families and friends to get to know and explore their local surroundings. With the new Geopark card game, the residents of the UNESCO Global Geopark Harz • Braunschweiger Land • Ostfalen, are encouraged to discover geological treasures even without leaving their own home.



After the presentation an excursion to a geological outcrop.

(Photo by Dr. Klaus George)

Esther Czymoch, czymoch@harzregion.de
(Translation: Nadine Claus)

Karawanken-Karavanke UNESCO Global Geopark, Austria-Slovenia

New hiking experience in the cross-border
Geopark Karawanken-Karavanke

The Karawanken-Karavanke Trail. My cross-border treasure hunt.



Route of the
Karawanken-
Karavanke Trail.

(Author Urosh
Grabner)

This treasure is situated right here, in the middle of Europe, in the Southern Alps – the Karawanken-Karavanke mountain range.

Our hiking trail is called the Karawanken-Karavanke Trail. Its 13 stages reveal the ever changing faces of the magnificent landscape time and time again. As if travelling through time, you will see traces of glaciers and changes in the landscape that have taken shape over millions of years, changes in people and their work, and animals and plants of all sizes. The views and insights leave an impression: colours and shapes, mountains and valleys, rocks and iron, forests and meadows – all of which attest to what life was like in the past. The history and stories of this area are infinitely versatile. Local legends and fairy tales centre around mysterious places that still give one the impression that time has stopped. You are



Karawanken-
Karavanke Trail
offers stunning
views.

(Photo by Urosh
Grabner)



Elevation
profile of the
Karawanken-
Karavanke Trail.

(Author Urosh
Grabner)

walking on borders, on the tectonic plates between Africa and Europe, on trails between Austria and Slovenia. In the Karawanken-Karavanke mountains.

A particularly special and beautiful aspect of the Karawanken-Karavanke Geopark is the fact that it unites what has long been separated – two countries, one region. A treasure in the heart of Europe.

Within the framework of the Interreg V-Slovenia-Austria 2014-2020 Cooperation Programme, the Geopark Karawanken-Karavanke implemented a project with the acronym NaKult (Geological Hiking Experiences in the Karawanken-Karavanke), which was co-financed by the European Regional Development Fund and the Land Kärnten bringing together eight partners from Slovenia and Austria. The project, whose main objective was to create a long-distance cross-border hiking trail around the Karawanken-Karavanke Geopark, finished at the end of April 2022. The result of the project is a new (geo)tourism product called the Karawanken-Karavanke Trail, a 265 km long hiking trail divided into 13 daily stages.

The Karawanken-Karavanke Trail crosses eight peaks, namely Oistra, Topitza, Petzen-Peca, Raduha, Smrekovec, Uršlja Gora, Košenjak and Klein Obir. Its highest point is 2139 m and the lowest at 329 m. Each stage ends or begins near one of the mountain huts or other accommodation options. The entire long-distance hiking trail is described in a printed guidebook, in addition five regional maps were produced at a scale of 1:25,000. The Karawanken-Karavanke Trail is intended for different target groups. Experienced hikers will be able to conquer the entire trail, while families and other target groups will find sections of individual, less demanding stages suitable.

It is common knowledge that outdoor activities like walking and hiking bring a wide range of individual benefits. Walking and hiking were also among low-risk outdoor activities during the COVID-19 pandemic. Added value of our new long-distance cross-border hiking trail Karawanken-Karavanke Trail is that it is not only for recreation, but also for discovering the rich geological, natural, and cultural heritage of the Karawanken-Karavanke UNESCO Global Geopark.

You are warmly invited to explore the Karawanken-Karavanke Geopark and the Karawanken-Karavanke Trail.

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KATLA JARÐVANGUR
LIFANDI LAND

Katla UNESCO Global Geopark, Iceland Katla Geopark - sold out!



The large
number of
visitors in
Reynisfjara
Beach in
September
2022.

After two years of living through a serious pandemic, with strict travel restrictions grinding everyone down, the time has finally come when we are free again. As a result tourism has certainly reawakened, at least in the case of Katla Geopark in Iceland.

In September 2022, the number of visitors was the fourth highest ever recorded since records began. The summer was certainly not quiet, with every hotel in the Geopark sold out for weeks on end. This is certainly a desirable dilemma, to be able to bounce back so efficiently and effortlessly without worrying about economic doomsday post-covid predictions. Of course, some of this has to do with company closures, the difficulty in hiring staff and the longer duration that visitors are staying per-visit. Prices sky-rocketed as a result, but still the demand was high and Katla Geopark was, and still is, sold out.

We barely managed to arrange for our project partners to visit us following the covid lockdowns. In early March we welcomed students from Norway and Finland through the project Geoheritage in rural communities. In June we welcomed project partners associated with the Ruritage Project from UNESCO, the University of Bologna, and Appignano-del-Tronto. Due to difficult circumstances, they were joined by Estrela UGGp which is associated with the Building Bridges Project. In September, we welcomed Holy Cross UGGp and AGH University in Krakow who are associated with the Geotourism Studies Project. Find-

Happy guests
associated with
the Ruritage and
Building Bridges
projects in the
last minivan
available to
rent, in June
2022.



ing suitable accommodation was challenging, we barely managed to hire the last minivan for the group.

Now that most companies have reopened and business is „back-to-normal“, there is a lot of talk about the need for more growth, more accommodation, more sites, a larger infrastructure such as parking lots for all the visitors that want to explore Katla Geopark.

But the question arises, to what end should we say that growth is starting to have a negative impact and can no longer be considered sustainable, where do we draw the line? When are we sufficiently and happily „sold out“ with enough hotels, a large enough infrastructure, to still be able to accommodate and welcome the visitors that sustain us economically, yet, in an environmentally-friendly way? What will become of Katla Geopark if huge parking lots engulf the geosites, hotels block the views, and traffic disrupts the peace and quiet provided by nature?

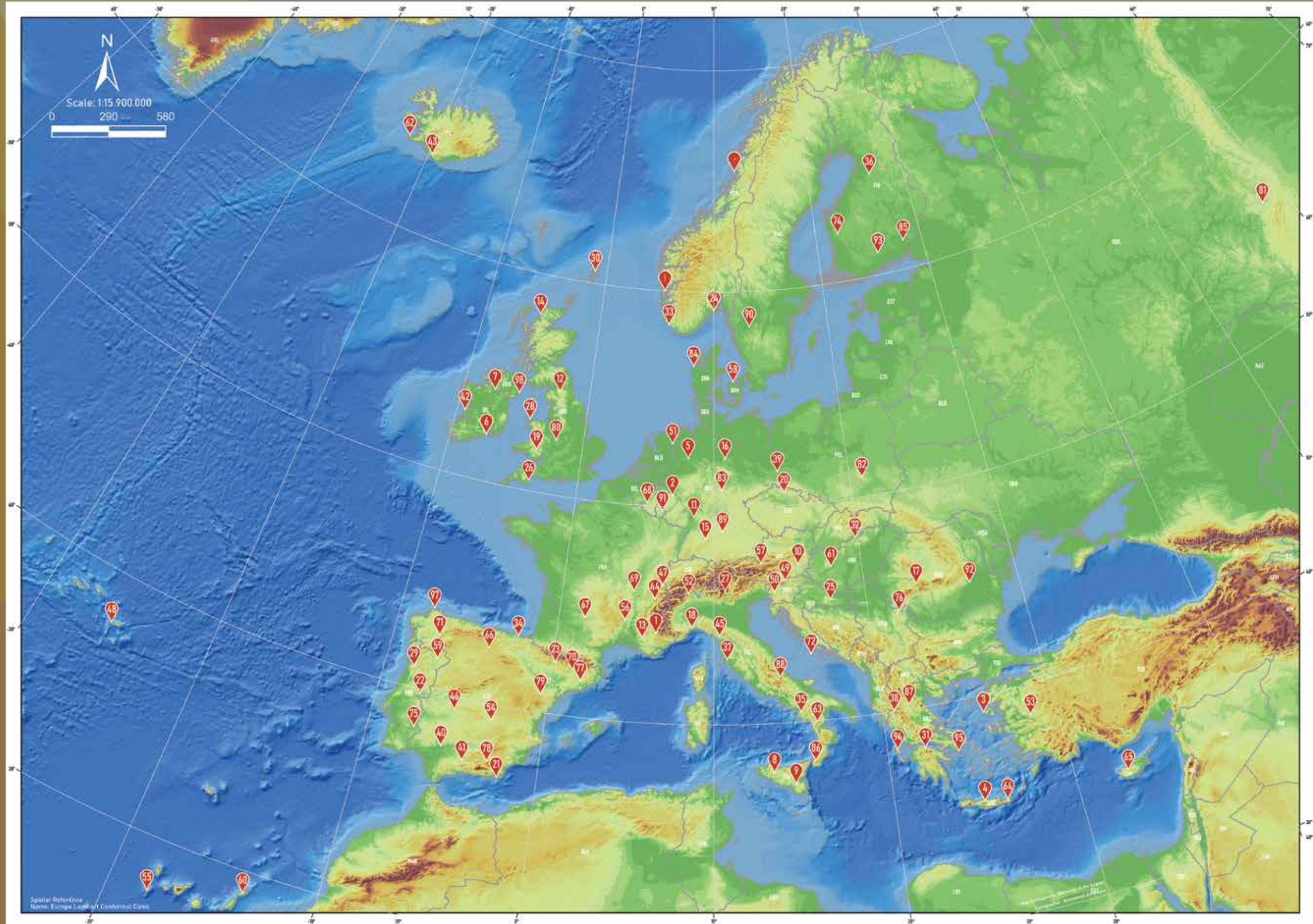
According to the Iceland Tourist Board, the main reason that people visit Katla Geopark is for nature and the landscapes. They describe the waterfalls, the mountains, the vast, black coastline, the moss-covered lava fields, and the powerful glacier rivers. The aesthetic value for Katla Geopark is high with a large portion of the area still equivalent to wilderness. As these areas are decreasing on a global scale their value becomes increasingly precious.

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Participants
from Holy
Cross Geopark
and the AGH
University in
Krakow Poland
visiting South
Iceland and
Katla Geopark
during their
training course
associated with
the Geotourism
Studies
September
2022.

The European Geoparks Network today



The Network consists of 98 Geoparks in 28 European countries (February 2023)
www.europeangeoparks.org



No. Geopark	Country	Year	No. Geopark	Country	Year
1 Haute-Provence Geopark	France	2004	50 Idrija Geopark	Slovenia	2013
2 Vulkaneifel Geopark	Germany	2004	51 De Hondsrug Geopark	Netherlands	2013
3 Lesvos island Geopark	Greece	2004	52 Sesia-Val Grande Geopark	Italy	2013
4 Psiloritis Natural Park Geopark	Greece	2004	53 Kula-Salihli Geopark	Turkey	2013
5 Terra vita Geopark	Germany	2004	54 Molina and Alto Tajo Geopark	Spain	2014
6 Copper Coast Geopark	R.Ireland	2004	55 El Hierro Global Geopark	Spain	2014
7 Cuilcagh Lakelands Geopark	N.Ireland & R.Ireland	2004	56 Monts d'Ardeche Geopark	France	2014
8 Madonie Natural Park Geopark	Italy	2004	57 Ore of the Alps Geopark	Austria	2014
9 Rocca Di Cerere Geopark	Italy	2004	58 Odsherred Geopark	Denmark	2014
10 Styrian Eisenwurzen Geopark	Austria	2004	59 Terras de Cavaleiros Geopark	Portugal	2014
11 Bergstrasse-Odenwald Geopark	Germany	2004	60 Lanzarote and Chinijo Islands Geopark	Spain	2015
12 North Pennines AONB Geopark	England UK	2004	61 Bakony-Balaton Geopark	Hungary	2012
13 Luberon Geopark	France	2005	62 Reykjanes Geopark	Iceland	2015
14 North West Highlands Geopark	Scotland UK	2005	63 Pollino Geopark	Italy	2015
15 Swabian Albs Geopark	Germany	2005	64 Sitia Geopark	Greece	2015
16 Harz Braunschweiger Land Geopark	Germany	2005	65 Troodos Geopark	Cyprus	2015
17 Hateg Country Dinosaur Geopark	Romania	2005	66 Las Loras Geopark	Spain	2017
18 Beigua Geopark	Italy	2005	67 Causses du Quercy Geopark	France	2017
19 Fforest Fawr Geopark	Wales UK	2005	68 Famenne-Ardenne Geopark	Belgium	2018
20 Bohemian Paradise Geopark	Czech Republic	2005	69 Beaujolais Geopark	France	2018
21 Cabo de Gata Geopark	Spain	2006	70 Origens Geopark	Spain	2018
22 Naturtejo Geopark	Portugal	2006	71 Courel Mountain Geopark	Spain	2019
23 Sobrarbe-Pirineos Geopark	Spain	2006	72 Vis Archipelago Geopark	Croatia	2019
24 Gea-Norvegica Geopark	Norway	2006	73 Trollfjell Geopark	Norway	2019
25 Papuk Geopark Geopark	Croatia	2007	74 Lauhanvuori-Hämeen kangas Geopark	Finland	2020
26 English Riviera Geopark	England UK	2007	75 Estrela Geopark	Portugal	2020
27 Adamello Brenta Geopark	Italy	2008	76 Djerdap Geopark	Serbia	2020
28 Geo Mon Geopark	Wales UK	2009	77 Central Catalonia Geopark	Spain	2012
29 Arouca Geopark	Portugal	2009	78 Granada Geopark	Spain	2020
30 Shetland Geopark	Scotland UK	2009	79 Maestrazgo Geopark	Spain	2020
31 Chelmos-Vouraikos Geopark	Greece	2009	80 Black Country Geopark	England UK	2020
32 Novohrad-Nograd Geopark	Hungary & Slovakia	2010	81 Yangan-Tau Geopark	Russian Federation	2020
33 Magma Geopark	Norway	2010	82 Holy Cross Mountains Geopark	Poland	2021
34 Basque Coast Geopark	Spain	2010	83 Thuringia Inselberg-Drei Gleichen Geopark	Germany	2021
35 Cilento, Vallo di Diano e Alburni Geopark	Italy	2010	84 Vestjylland Geopark	Denmark	2021
36 Rokua Geopark	Finland	2010	85 Saimaa Geopark	Finland	2021
37 Tuscan Mining Park Geopark	Italy	2010	86 Aspromonte Geopark	Italy	2021
38 Vikos-Aoos Geopark	Greece	2010	87 Grevena Kozani Geopark	Greece	2021
39 Muskau Faltenbogen / Łuk Mużakowa Geopark	Germany & Poland	2011	88 Maiella Geopark	Italy	2021
40 Sierra Norte de Sevilla Natural Park Geopark	Spain	2011	89 Ries Geopark	Germany	2022
41 Sierras Subéticas Geopark	Spain	2006	90 Platabergens Geopark	Sweden	2022
42 Burren and Cliffs of Moher Geopark	R.Ireland	2011	91 Miëllerdall Geopark	Luxemburg	2022
43 Katla Geopark	Iceland	2011	92 Buzău Land Geopark	Romania	2022
44 Massif des Bauges Geopark	France	2011	93 Salpausselkä Geopark	Finland	2022
45 Alpi Apuani Geopark	Italy	2011	94 Kefalonia-Ithaca Geopark	Greece	2022
46 Villuercas Ibores Jara Geopark	Spain	2011	95 Lavreotiki Geopark	Greece	2023
47 Chablais Geopark	France	2012	96 Sunnhordland Geopark	Norway	2023
48 Azores Geopark	Portugal	2013	97 Cabo Ortegal Geopark	Spain	2023
49 Karavanke/Karawanken Geopark	Slovenia & Austria	2013	98 Mourne Gullion Strangford Geopark	UK & N.Ireland	2023



Kula Salihli UNESCO Global Geopark, Türkiye Memories and the “New Normal” in Kula Salihli Geopark



A crowded student group before the pandemic in Kula Divlit Volcanic Park

The Covid 19 pandemic has affected our lives in an incredible and dramatic way, especially our social life and economy. Consider the fact that some of us have lost our best friends, family members, and relatives. We also occasionally wondered about being infected by a virus and worried about shaking hands or hugging friends. Children who spent their best years being locked at home.... Have you ever attempted to explain the virus to a three or four year old? What was its proper definition, and how was it to be interpreted? Was the virus a monster or an insect?

We set sail towards a more free life with the easing of pandemic conditions in the spring of 2022. Without a doubt, this new and freer life was dictated by the pandemic's conditions, and nothing would ever be the same again... maybe we will experience the effects of the traumas we experienced during the pandemic period for a long time. We will carry their anxiety.. and maybe under these conditions, we will create the “new normal” and get used to it.

As in the pandemic period, geoparks are one of the safest places in the world in the “new normal period”... People again started to vanish inside the pages of Earth's history, surrendering to mother nature...

Opening session of the International Geomorphology Congress with a small group of participants in the context of adapting to the “new normal”.



Undoubtedly, this is crucial for the local community and our geoparks...

The flow of life in the new period has begun to locate somewhere between the pandemic and pre-pandemic periods... In other words, we are now somewhere between our memories and our traumas...

Even though Kula-Salihli Geopark was one of Turkey's safest places during the epidemic, it is difficult to assert that we were unaffected. Thankfully, pandemic-free life has begun at Kula Salihli UNESCO Global Geopark, and we are delighted with this. We were able to hold the International Geomorphology Congress face to face, which had been postponed twice due to the pandemic. Our educational activities have begun to resume their normal course. Our visitors are increasing on a daily basis. Our partners' programmes are continuing as part of the Erasmus Exchange Programme. We are hopeful that no new pandemic will emerge.

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Students visiting our Geopark as part of the Erasmus project play the Balance Tower Game (The game promotes personal development in areas like goal-focus, loyalty, patience, perseverance, resistance, acting with a team spirit, and reliability. It is founded on the principles of cooperation and learning).

Lanzarote and Chinijo Islands UNESCO Global Geopark, Spain

Geo-preservation, Responsible use
of the Land and Tourism.

Experiences from the Lanzarote and Chinijo Islands Geopark



Volcanoes for all, a course for guides tours.

On a global scale, we are facing tough times with great challenges. One of them is the new financial and social reality following the Covid-19 pandemic. This new scenario has had tangible consequences especially when it comes to a reduction in social exchanges between different countries, which leads to rethinking some of the territorial development models used to date. Within this situation, there are strategies that are increasingly significant for endogenous development. There are areas with important geodiversity and unique geological heritage. Geo-preservation is key in order to guarantee the continuation of local heritage, as well as allowing the creation of intelligent progress towards sustainable development. Ever since its origin, the Lanzarote and Chinijo Islands UGGp, has promoted initiatives aimed at guaranteeing preservation and geodiversity. To date, many of the actions taken were intended to consolidate and strengthen a territorial development



How to decrease the volcanic risk.

model that goes hand in hand with geo-preservation, territorial valuation actions and geotourism. In time, this set of actions have led to higher social involvement, favouring the local consolidation of the Geopark, actions related to it and a higher success rate that is based on the active participation of citizens during the execution and assessment phases of actions and projects.

Currently, and after the pandemic, the demand for cultural activities as well as training, leisure in nature and geotourism, has significantly increased. After Covid-19, there was a newly-grown interest in things near us, experiences, discovering open spaces, in nature, as well as understanding everything associated with it. During the past two years the Geopark, has increased the work load required for the island to achieve a resilient society that is a role model for sustainable financial development, creating an economy that respects and ensures the preservation of the geological heritage. This includes activities involving geo-preservation and territorial restoration, in addition to coordinating activities with individuals and local administrations involved with tourism and environmental issues. All of which, is achieved mainly through specific and applied training programmes with the support of businesses connected with geotourism, active and rural tourism, and nature related companies. In addition, the Geopark has a well-defined role to promote public involvement, aimed especially at the local population, in order to guarantee the preservation of our geo-heritage. They are after all the main users of our land and also as tourists.

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Lauhanvuori - Hämeen kangas UNESCO Global Geopark, Finland

Promoting sustainability through cycling tourism - Two Billion Year Tours cycling routes in Lauhanvuori - Hämeen kangas Geopark

Kauhaneva Mire in Kauhaneva-Pohjankangas National Park is one of the Geopark's main attractions and can be reached by a bicycle on the TBYT cycling routes.

(Photo by Niina Rautiainen)



The cycling events on the TBYT routes, as in Kauhaneva Mire in Kauhaneva-Pohjankangas National Park shown in this picture, attract cyclist of different ages and spread awareness of the Geopark and the TBYT cycling routes effectively.

(Photo by Niina Rautiainen)



The countryside and the Geopark's attractions around the municipal centres, as in the municipality of Jämijärvi shown in this picture, may be reached on the Enjoyer routes.

(Photo by Mirja Koivisto)

Cycling tourism was developed in Lauhanvuori - Hämeen kangas UNESCO Global Geopark, Finland (LH Geopark) with an EU-funded project to promote sustainable mobility accessibility to geosites, as well as realizing the United Nations Sustainable Development Goals (SDGs). Currently visitors access the Geopark's sites mainly by private cars. As the popularity of cycling in Finland rises, the potential for cycling tourism in the Geopark will also increase. Combined with public transportation, cycling diminishes the emissions created by visitors with cars.

Nature tourism, in general, has grown significantly during the COVID-19 pandemic in Finland. Also, LH Geopark has attracted significantly more visitors during the last few years. The Geopark aims to encourage the tourists to travel more sustainably and to support the local economy.

The Geopark's new cycling routes were designed using Participatory Geographic Information Systems' methods on the Maptionnaire platform. Proposed routes were generated by the Geopark's

experts. People were asked to comment on the suggested routes on an online platform both on their own initiative and in workshops. Preliminary routes were refined based on the feedback.

On this new Geopark-wide Two Billion Year Tours (TBYT) cycling routes, the geological story of the Geopark, "From Mountains to Mires", can be experienced by bike. Three long interconnected Traveller routes and shorter local Enjoyer routes following roads as well as Adventurer routes along forest paths and gravel roads are included.

Together the Traveller routes, each with a length of approximately 140 - 180 km, form a trefoil. The easy Enjoyer routes start from the municipal centres and are suitable for short day trips. The Adventurer routes take the cyclist into the core of the Geopark's nature and its main attractions. The TBYT routes are connected to the EuroVelo 10 route and other cycling routes nearby and can be reached directly by public transport.

The information about the Geopark's cycling routes, attractions, and tourist services is available online on the Lhgeopark.fi website and on the Outdooractive platform as well as on the nationwide Bikeland.fi website. Information panels and paper maps can also be utilized. On the TBYT routes cycling events guided by LH Geopark's experts are organized regularly to enhance the recognition of the new route network and to spread the knowledge about the Geopark and its values.

In future, bicycle friendly tourism services based on the national Welcome Cyclist Badge will be further developed along the routes. The development of the provision and the quality of the cycling-friendly services will enhance the local economy to gain more profit from the increasing number of cyclists in the area.

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Workshop on volcanic risk.



Luberon UNESCO Global Geopark, France

“Green corners for rain”, a project to restore the permeability and greening of schoolyards in Luberon Geopark



Planting in a school: pupils get hands-on.

© Parc du Luberon

After asphaltting everything, are we going backwards? Or is it a leap forward?

The repeated climatic events of the last few years (strong heat waves, episodes of drought, intense rainfall...) have led local authorities to question the choices they make regarding the development of towns and villages, the quality of the environment, attractiveness of the territory, health, and the availability of water resources.

With this in mind, the Luberon Regional Nature Park, the Luberon Geopark's management structure, and its municipalities have implemented the call for projects «Green corners for rain» from the Rhone-Mediterranean-Corsica Water Agency to rethink the structure of almost twenty schoolyards.

It is clear that this call for projects came in response to a genuine concern and desire to act on the part of the territory's elected officials, since some fifteen municipalities immediately expressed their interest in this action. For them, the project is an opportunity to experiment on a small scale

with what could be reproduced elsewhere in public spaces (car parks, squares, roadsides, etc.).

Furthermore, its innovative nature in terms of adapting to climate change, exemplary water management and taking into account the pedagogical and sociological uses of spaces, makes it a sustainable, illustrative and educational project.

To date, 11 schoolyards in 10 municipalities have already changed their appearance thanks to the work carried out in the summer of 2022. The result? More permeable surfaces than asphalt, but above all more natural surfaces using soil, sand, wood chips, rustic grassland, etc.

New facilities have also been installed to stimulate children's autonomy, creativity and experimentation, skills that are very useful for personal well-being. Thus, games, pathways, mounds, water games, wooden paths and planted huts are provided for the children to diversify the range of games and provide spaces adapted to each of their interests.

The final result is visible, with the planting of trees, shrubs and ground cover plants which were the subject of gardening workshops with the pupils. Increasing the amount of vegetation helps to strengthen urban biodiversity while fostering the link between children and nature.

In these « schoolyards of tomorrow », vegetation, permeable soils, the presence of water and shade structures create real refreshing islands to the delight of the children and their teachers who will be able to use new educational spaces outside the school walls!

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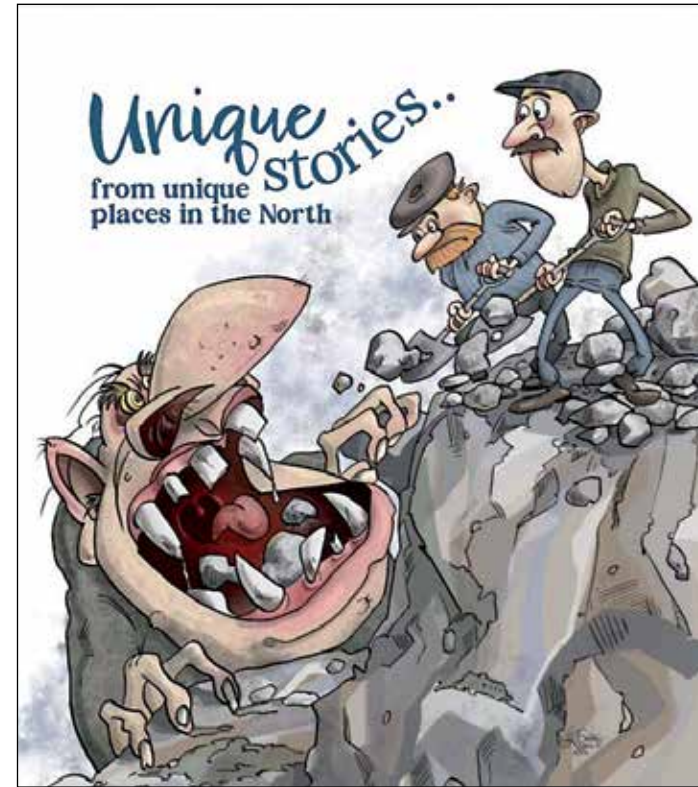
Aerial view of a transformed schoolyard in Forcalquier.

© Jérôme Zindy



Magma UNESCO Global Geopark, Norway.

Local stories, communities, culture, and food: the GEOfoodEDU project.



The cover page of the Unique Stories Booklet.

The GEOfood initiative, led by Magma Geopark (Norway), based on the importance of local sustainable food resources and local communities, aims to support UNESCO Global Geoparks. The GEOfood brand can be used only in these territories

for developing local connections focussing on the importance of local sourced food, raw materials, and specific storytelling linked with geodiversity and culture. Through storytelling, 32 UGGPs increased awareness about sustainable agriculture and their geological heritage, creating new tourist opportunities deeply linked with unique stories. To valorise these stories, Magma Geopark, together with the Geological Survey of Faroes, Katla UGGP and Visit Greenland, was awarded a grant from the Nord Atlantic Cooperation Fund (NORA). Two territories that are not UGGPs, are not allowed to use the GEOfood brand., However, the link between local food and the landscape is, through having to survive in extreme climates, very strong both in Greenland and the Faroes. Therefore the goal of the cooperation was to strengthen the knowledge concerning the importance of preserving the stories from local communities which are part of our intangible heritage. Furthermore, the use of local resources in restaurants and promoting traditional food contributes to reducing CO2, empowering local enterprises, and engaging people to fight climate change.

Through the project we have developed educational videos and a booklet that collects stories from unique places! Info:

https://issuu.com/viadesignbyra/docs/unique_stories

<https://geofood.no/geofood-education/educational-projects/>

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The Brown Bee, on of the stories in the Unique Stories Booklet.



The Brown Bee

Sverre Sirevåg was born in 1927 and started keeping bees already at the age of fourteen. He started off with two beehives, but they gradually grew into many more, in addition to the ones he looked after for others. In 2010, his daughter Gretha took over the production together with her husband, Geir Arne. They received useful help from their mentor Sverre, and they now produce under the brand "Den brune bien" (The Brown Bee), offering various types of honey and jelly.

Geir Arne, the general manager of a corporate health service, has found himself spending ever more time on the hobby of beekeeping, honey and jelly making. In 2009, Geir Arne and Gretha moved to Sokndal and began helping Sverre with the hives. Sverre had at that point more than fifty beehives, and Geir Arne proved to be an interested and quick learner of the necessary skills. Moreover, Geir Arne noticed that the honey had different colour, consistency, and taste depending on the time of year and which flowers the bees brought nectar from. This observation came also as a welcome eyeopener for Sverre, who had produced honey by the bucket thinking that honey was honey. The production was then reorganised, and distinct types of honey were developed, such as heather honey, farm honey, summer flower honey, etc. The different types of honey were then made available in different jar sizes.

Sverre, who has been keeping bees for more than 80 years, is still active at the age of ninety-four. He still keeps a couple of hives on his own, and he can sit and look at the bees flying in, reflecting on where they come from and what nectar they bring with them. Another more serious aspect, is the way that the present climate change threatens the existence of bees, and, by extension, our production of

pollination-dependent fruits. Therefore, in caring for the beekeeping tradition and the bees, Gretha, Geir Arne and Sverre do a most important job.

The Nordic brown bee, *Apis mellifera mellifera*, is considered an ecotype or subspecies of the ancient European honey bee. The Nordic brown bee is the only original bee breed in Northern Europe and is today considered a breed worthy of conservation. In the Norwegian purebred areas in Flakkefjord, Lund, Sokndal and Sirdal, it is forbidden to keep bees other than the brown bees. Here, there are natural boundaries with mountains, valleys and oceans that isolate the population and prevent mating with other bee breeds.

"Geir Arne noticed that the honey had different colour, consistency, and taste depending on the time of year..."

The mountains and the many valleys that make it possible to maintain a purebred area for the brown bee, have been created by the long-term weathering down of a mountain range the size of the Himalayas. The bedrock along the sea consists of anorthosite, a rare rock which has weathered in the warmer periods of Earth's history, creating the many valleys that give the landscape its distinctive form. In today's relatively cold climate, however, the anorthosite does not weather much and therefore creates the basis for little vegetation, apart from the patches of heath so highly appreciated by the bees. The alternating sections of anorthosite and the more fertile rock north, which contains both phosphorus and iron and thus deteriorates rapidly, creates a great biodiversity treasured by the bees and the honey lovers alike. Anorthosite is also to be found on the moon's surface.

Maestrazgo UNESCO Global Geopark, Spain & Sobrarbe-Pyrenees UNESCO Global Geopark, Aragón, Spain

Information, Education and Research. Travelling exhibitions as a tool to improve the visibility of the Maestrazgo and Sobrarbe-Pyrenees Geoparks.

Geoparks are aware of the importance of sharing information about their territory in an easily understandable way to improve their visibility for a non-specialized audience. To support this line of work in recent years Maestrazgo UGGp has participated in the development of two travelling exhibitions namely the UNESCO Global Geoparks of Aragón in collaboration with Sobrarbe Pyrenees UGGp and the Maestrazgo Cultural Park, UGGp.

UNESCO Global Geoparks of Aragón

The Department of Education, Culture and Sports, through its Directorate General of Cultural Heritage (Government of Aragón), organized this travelling exhibition. Spain currently has fifteen UNESCO Global Geoparks, two, geoparks Maestrazgo and the Sobrarbe-Pyrenees are located in the Aragon region. During 2021-2022 the exhibition has toured the capitals of several Spanish provinces: Huesca, Teruel, Zaragoza, Logroño and Guadalajara.

Both exhibitions are innovative and focus not only on geology but also on nature, culture, science, education and sustainable development. This exhibition makes a special emphasis about the projects implemented by the Aragonese Geoparks. In addition to disseminating the didactic and scientific programme developed, the exhibition also serves to value, thanks to murals and videos with testimonies, the work of national and international geoscientists who come to work in and use these territories as an open classroom.

In addition to extensive information and the varied representation of images distributed in 30 modules and exhibition tables, the exhibition provides a series



Banner of the UNESCO Global Geoparks of Aragón Travelling exhibition during its opening day in Fundación Ibercaja showroom (Huesca) preparing to tour several Spanish provinces.



A second itinerant exhibition focused on the Maestrazgo UGGp travels through different municipalities to promote and reinforce the identity of the Geopark.

of resources to make the exhibition more educational and attractive. Thus, for example, you can see different types of rocks or discover interesting geotourism proposals thanks to two audiovisuals that present tourism provision related to the geological, natural and cultural heritage of the geoparks.

Maestrazgo Cultural Park, UGGp

The second exhibition which was co-created with the Dinópolis Foundation reviews more than two decades of the Maestrazgo territory as a Geopark. The Geopark's origin dates back to June 2000, when four European territories, the Geological Reserve of Haute Provence (France), the Natural History Museum of the Petrified Forest of Lesbos Island (Greece), Gerolstein/Vulkaneifel (Germany) and the Maestrazgo Cultural Park (Spain) agreed to create the European Geoparks Network (EGN) as a system for promoting regional development by using their unique geological resources through responsible geotourism. This exhibition serves as a first introduction to the Geopark and reviews its natural and cultural heritage from the standpoints of geoconservation, geoeducation and geotourism. During 2021 and 2022 the exhibition toured several localities of the Geopark including Aguaviva, Berge, Castellote, Camarillas, Ejulve, Fuentes Calientes, La Mata de los Olmos, La Zoma, Molinos, Mosqueruela, and Mirambel.

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Geoparks are territories that should be valued and disseminated among the citizens in order to make them aware of the work that is carried out in them (Government of Aragón Showroom, Teruel)



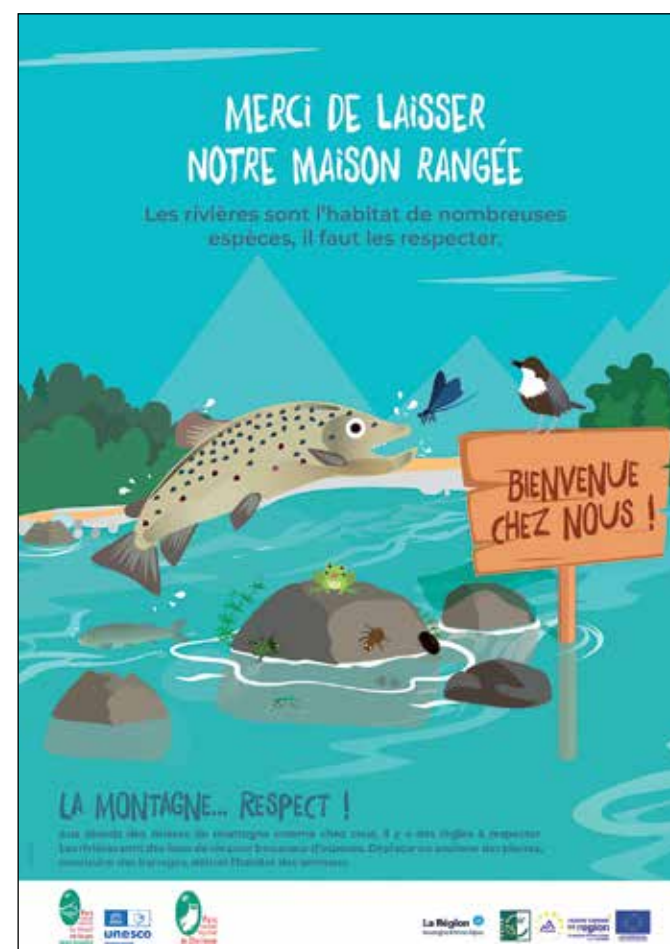
Massif des Bauges UNESCO Global Geopark, France

The mountain...respect!

Camping_Poster_MDB : Thank you for being content with the stars. In the tent, it is necessary to remain discreet and not to leave anything in its path so as not to disturb us.



Generic_Poster_MDB : In the mountains and at home, adopt the right approach.



River_Poster_MDB: Thank you for keeping our house tidy. Rivers are the habitat of many species and should be respected.

How can we share the mountain spaces and ensure that tourist, economic and leisure activities cohabit? The Regional Nature Parks of the Massif des Bauges UGGp and Chartreuse and the Pays Basques have created a communication campaign to share with as many people as possible the rules for good conduct in the mountains: The mountain...Respect!

Aims: The campaign aims to remind people of the rules of good conduct so that hikes and walks can occur as smoothly as possible by respecting the work of farmers and foresters and allow everyone to enjoy the magnificent landscapes of the area by adopting the correct responses.

Method: Creating «punchy» visuals in a communication centred around animals, to remind hikers of the few essential rules in a light hearted way and to welcome them to these areas.

Results: A campaign full of humour and pep entitled «The mountain... respect!

The spirit of the messages. The good weather is here, and so is the desire to cool off in the mountains? Before you head for the great outdoors and enjoy the cool heights, we would like to remind you of the rules for good behaviour so that everyone can continue to enjoy them. To illustrate the campaign «The mountain... Respect», animals are included in the picture. They remind hikers of a few essential rules and welcome them to the mountain pastures, forests, or riverbanks, in spaces for work and life.

The scene is set for the mountain pastures and their importance for herds of animals. These meadows are grazed by animals or mown to produce hay for the winter. The forests and the rivers are places for work and fragile environments for biodiversity.

Visitors are reminded of the rules for good behaviour: close the gates, do not contaminate the water in the troughs, stay on the paths, keep dogs on a lead, camp without leaving any trace, do not move the stones in the rivers, do not insult a forester at work, and do not defecate behind an alpine chalet!

Christophe Lansigu, c.lansigu@parcdesbauges.com

Molina Alto Tajo UNESCO Global Geopark, Spain Geolandscaping and landforming degraded sites in geoparks. Using Molina Alto Tajo Geopark as an example

UNESCO Global Geoparks usually have world-class landscapes within natural and rural areas. However, most of them include sites with landforms degraded by human activities involving earth moving, in which disturbances through mining and quarrying probably have the highest impact on the landscape. Conversely, we humans can also be a 'friendly geomorphic agent', designing and building landforms and landscapes which can mimic the shape and complexity of natural landscapes. The Molina Alto Tajo Geopark is a stakeholder of the LIFE RIBERMINE project, which provides an outstanding example of such solutions, at both global and European scales.

The Molina Alto Tajo Geopark includes the largest kaolin mines within the Iberian Peninsula, with active and abandoned sites. The Santa Engracia abandoned mine had the the worst environmental effect. Severe erosion processes at this mine contributed up to 353 t ha⁻¹ yr⁻¹ to the pristine fluvial ecosystems of the Alto Tajo Natural Park (Martín Moreno et al., 2018), a protected area overlapping the Molina – Alto Tajo Geopark.

Currently the best available technologies and knowledge for landscape reconstruction (geomorphic landform design, as a foundation for ecological restoration) make it possible to control the rate of erosion by stabilizing the Santa Engracia mine waste dumps, pits and highwalls. They also contribute to rebuilding ecosystems and landscapes that are virtually indistinguishable from adjacent natural-rural landscapes. The value of the geomorphic design of degraded landforms and landscapes within the framework of a Geopark is so great that, as illustrated by the LIFE RIBERMINE-Molina Alto Tajo Geopark project, the reconstructed 'artificially created natural' landforms have an extraordinary educational, research and touristic value by becoming original new man-made gesites.



View of the pre-rehabilitated external waste rock dumps of Santa Engracia mine, in March of 2020

(photo by DIEDRO)

Aerial view from the same perspective following geomorphic-based rehabilitation, in May 2021

(photo by M.A. Langa).



Severe gullying-badland erosion at the Santa Engracia mine.

(Photo by DGDRONE)

The LIFE RIBERMINE, within the Molina Alto Tajo Geopark, is the first mine rehabilitation project, globally, which combines the geomorphic restoration of sandy waste rock dumps (following the GeoFluv – Natural Re-grade method) and hard-rock residual highwalls (following the Talus Royal method). This is also, within the European Union, the first mine rehabilitation project using SIBERIA landscape evolution modelling to evaluate the erosional stability of post-mining landform designs.

For additional information LIFE RIBERMINE website - https://liferibermine.com/en/homepage_en/

Molina Alto Tajo Geopark - <http://www.geoparque-molina.es/>

Alto Tajo Natural Park - <https://areasprotegidas.castillalamancha.es/rap/espacios-naturales-protegidos/enp-parque-natural/parque-natural-del-alto-tajo>

Martín-Moreno, C, Martín Duque, JF, Nicolau, JM, Muñoz, A & Zapico, I 2018. 'Waste dump erosional landform stability – a critical issue for mountain mining', Earth Surface Processes and Landforms, vol. 43, pp. 1431–1450.

Talus Royal method - <https://www.2g.fr/talus-royal>

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"(geomorphic landform design, as foundation for ecological restoration)



Paul Royal (centre, with hat), inventor of the Talus Royal method, directing works for reshaping the Santa Engracia mine former highwall into a 'natural' cliff.

(Photo by Miguel Angel Langa)



Muskau Faltenbogen / Łuk Mużakowa UNESCO Global Geopark, Germany and Poland First Youth Panel in the Muskau Faltenbogen / Łuk Mużakowa Geopark



Muskau Faltenbogen / Łuk Mużakowa UGp Youth Panel discussing the issues.

(Photo by Head Office).

The UN Sustainable Development Goals considered by the Youth Panel.

(Photo by Head Office)



motivating SDGs were SDG13 (Climate Action), SDG 14 (Life below water), SDG 15 (Life on land), SDG16 (Peace, justice and strong institutions) and 17 (Partnership for the goals).

In a further action, the young people focussed on messages, particularly on the above-mentioned topics, which they addressed to the Geopark, local governments and decision-makers. The playful arrangement in small groups according to the World Café method made it easier for the young people to exchange their views, to argue and to develop their messages and demands. The event was framed by a sustainable joint tea and chocolate buffet, supported by the local confectionery Felicitas which promotes the sustainable and fair cultivation and trade of cocoa in Africa.

In a second Youth Panel in spring 2022 with the same group, the young people jointly formulated their ideas for the world of tomorrow, the necessary and future-oriented changes, their possibilities for action and tried to address them. The workshops promoted the young people's ability to compare their own perceptions with those of others, to exchange them and thus make their and the actions of others a little more sustainable. Step by step, they became aware that the dimensions of the primarily local problems are also relevant on a global scale.

Based on the experience with the Test-Youth Panel, a permanent supplementary teaching programme will be established in stages aimed at schools students aged 14 and over. This is increasingly important because the whole of Lusatia is in the process of a structural change that could not be more serious and lasting and will affect the lives of young people. This is why the participation format is particularly important, as it enables direct opinion-forming, participation in change processes and self-determined, future-oriented action.

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Messages formulated during the Youth Panel workshop.

(Photo by Head Office)



Naturtejo UNESCO Global Geopark, Portugal

Egitânia - Rooted in the History of Naturtejo Geopark



When I decided to create our own brand of olive oil seven years ago, I stopped the old Nissan D20 pickup in the middle of our olive orchard and looked around while the sound of rain crackled on the metal roof of the van. I absorbed the place, the experience I was having and wrote these first sentences in my field notebook: « The roots of our orchards grow deep in history, sharing the same soil that fed the Roman Empire in the brave province of Lusitânia. Then came the Visigoths, later the Muslims and in the 12th century, the ancient city of Egitânia was given to the Templars. Generously, these lands have nurtured all these beliefs, cultures, and generations... Egitânia Olive Oil - Rooted in History...».

Little did I know how much these words would define my personal journey and my project as an olive oil producer...After this, it was I who plunged into these lands, and deepened my knowledge of the historical roots of this ancient Portuguese village, into its landscape, its geology, its ecosystem, and the 2000 years of agricultural history of the soil that I care for today. I continued to prune these old olive trees, carving them in time, aware of all the generations of pruners that preceded me, and of all the succeeding generations which these old maternal olive trees will continue to provide with another season of shade, firewood and food. Our oldest dated tree is 1630 years old. At the time when it was planted the Roman Empire still governed this region. Old Goddesses!

Preserving the traditional olive orchards as a millenary agricultural system, and protecting the endemic olive varieties of this region, has become our mission. There are hundreds of different varieties of olives, each with its unique organoleptic and nutritional characteristics, resulting from the long period of adaptation to the climate and the type of soil where they were introduced. The varieties we work with (Bical, Cordovil and Galega) are the same varieties that the Romans brought when they



founded the Igaedis city (later Egitânia and Idanha-a-Velha, today).

This year, together with the Igaedis archaeological project team, we began to dig in our orchard. And there it was! A Roman villa intertwined in the roots of our trees, just as in the text I wrote at the beginning! We also found an iron forge, associated with another building, showing how much the extraction of ore was one of the main reasons for the conquest of Iberia by the Romans. The geological context is always the basic premise when choosing the location of a new settlement. The availability of water, the type of soils for cultivation, the elevated defensive position or the nature of the mineral resource. Idanha-a-Velha is no exception to these reasons and it is surely one of the golden jewels of this Geopark, as it is for our olive oil.

Tiago Lourenço,
(Real Idanha, Lda – Egitânia Organic Olive Oil) tiago.lourenco@realidanha.pt

The 180 ha of sustainable olive orchard.

Partnership between the academy and Real Idanha builds the terroir for a supreme olive oil.



North West Highlands UNESCO Global Geopark, Scotland, UK

A Natural Capital Approach in the North West Highlands Geopark



A walk in Coigach.

(Photo by Tim Hamlet)

Our Geopark is part of a collective peopled by representatives of local communities, public and private sectors called NorthWest2045. This initiative has been widely recognized for the depth and breadth of community consultation on a vision for the area to 2045 in line with our national climate and net zero targets. Extensive and intensive community consultation was carried out virtually throughout the Covid-19 pandemic, and the results now allow us to adapt to the new normal using priorities set by the people that live in and around the North West Highlands Geopark. The collective vision is to make the area an attractive place to live and work, build towards a diverse and sustainable local economy, and empower communities to shape their own future.

The NorthWest2045 roughly corresponds to the UNESCO Global Geopark boundary and has been selected as one of five pilot areas for the Scottish Government's Regional Land Use Partnerships. As part of this pilot, we are taking a 'natural capital approach' to talking about the land and the changes in land use needed to reach the net zero climate targets.

As part of informing this approach, over spring/summer of 2022, we commissioned the 1st Natural Capital

Assessment (NCA) of the Geopark area. The NCA is a way to help us begin to understand what nature provides for society through Ecosystem Services.

Our methodology was collaborative and place-based; we gathered data from people and organizations across, and beyond, the area.

The partners agreed to focus this study – which was time-limited – on the Ecosystem Services of carbon sequestration and biodiversity. We also trialed a place-based approach to measuring food production and education in one Community Council area.

By recognizing the value of our natural environment for people and the economy, our Natural Capital Approach aligns with the UN's Sustainable Development Goals (in particular, Goal 3: Good Health & Well-being; Goal 13: Climate Action and Goal 15: Life on Land) and integrates our Geopark into Agenda 2030.

As well as producing a substantial report of the work, we have created an ARCGIS Storymap and printed maps. Over the coming months we will use these resources to share the findings of this initial research with communities and decision makers and continue these conversations across the area. We will explore what people here value most about our land and landscapes; how natural capital and ecosystem services are fundamental to the well-being of all those who live here – and wider society – and how we can ensure they are sustained for generations to come.

You can read more about this work, and the NorthWest2045, at www.northwest2045.scot.

This work has been possible with support from the Heritage Lottery Fund, Scottish Wildlife Trust, the Highland Council,

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Kyle Side Walks.

(Photo by Due North Studio)

North Pennines AONB and UNESCO Global Geopark, England UK

Expanding Horizons in the North Pennines AONB and Geopark



School children following a trail at Derwent Reservoir.

In the North Pennines Area of Outstanding Natural Beauty (AONB) and UNESCO Global Geopark, staff are working with schools and young people from outside the Geopark boundary to help them connect with nature.

The pandemic saw lots of new visitors wanting to get out and about and enjoy beautiful scenery and explore more, alone or with friends and family. It also highlighted and deepened differences in privilege which are now becoming even more stark due to the rising costs of living.

The Geopark staff created a project to work with school children in underprivileged areas just outside the Geopark. The aim of the Expanding Horizons project is to connect these young people and others with nature and the landscape to support wellbeing and learning, and make sure the outdoors is a part of their new normal.

During spring and summer, the staff worked with five different primary schools for five sessions each. Activities included going for walks, reading, and drawing maps, building dens, playing games, following trails, searching for fossils and minerals, making microhabitats, designing creatures with clay, and stopping to really notice the world around them. Their families and home educating families were also invited for a day out. Some sessions brought the groups into the Geopark and others focused on exploring their local



A family rebuilds a den when they return to a school trip location.

area, to get to know the landscape and opportunities on their doorstep.

One teacher said: "They loved exploring the area where they live and discovering new places they have never been before and lots of them have since taken family members on the same walk we did around the local area...They now understand how the work we have done in school around climate change actually links to the area they live in and how this has an impact."

In Autumn 2022, Geopark staff supported groups from a school for young people with Special Educational Needs and Disabilities (SEND) to volunteer with environmental organizations and work towards their Duke of Edinburgh's Award. Activities included gardening, planting, building leaky dams to slow the flow of water, litter picking and reviewing accessibility. The team are working with teacher training courses at universities in the region to promote outdoor learning among the student teachers. Geopark staff have also received training on autism awareness and are working to improve the experience of neurodivergent people visiting Geopark sites.

The Expanding Horizons project is supported by the National Lottery Heritage Fund, and will continue until Autumn 2024.

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Novohrad-Nograd UNESCO Global Geopark, Hungary & Slovakia

The Slovak-Hungarian GeoTouristic Partnership



Area-specific preliminary training in the educational trail of Šomoška.

GEOTOP (Slovak-Hungarian GeoTouristic Partnership) is an Interreg project between the Slovak-Hungarian transnational Novohrad-Nograd UNESCO Global Geopark (UGGp) and the Hungarian aspirant Bükk Region Geopark.

The aim of the project was to develop and implement new services between the two geoparks. It was important to expand the geotourism network and to train professional tour guides and other geotourism specialists. The partners provide a training package for tourism service providers and professionals interested in guided tours in order to expand their services. This package included general knowledge about geology, biology, cultural history, accident prevention and area-specific modules. The two geopark areas became connected by creating an approximately seven kilometres long cross-border study trail which presents the values of wetland areas. The geoparks exchanged experiences through study tours for teachers, as well as professional forums in both countries. Both geoparks produced bilin-

gual publications and maps of touristic and study trails for their corresponding areas. As part of the project the geopark associates have created a bilingual methodology textbook for teachers and a workbook for high school students.

The Novohrad-Nograd UGGp's team has prepared plan documentations for four unique locations in the Geopark area. In the future, we would like to claim the costs of their implementation from the project.

The project proved to be successful. There was great interest in the programmes and several new attractions were built contributing to the development of both sites. The joint operation turned out to be a good start, and we hope to work on projects in the future, so that many people can get to know Geoparks and their activities.

Balázs György, geopark.filakovo@gmail.com



Study tour for teachers in the cross-border study trail.



The team of experts and entrepreneurs of the two geoparks at the closing conference under the Castle of Hajnáčka in Slovakia.

Ore of the Alps UNESCO Global Geopark, Austria Award for the Ore of the Alps Geopark



Awarding of the «ERDREICH PRIZE» to the Ore of the Alps UNESCO Global Geopark on Sept. 13th 2022 in Vienna. From left to right: Thomas Weber, Hanna Simons, Gert Furtmüller, Markus Häupl, Horst Ibetsberger, Leonore Gewessler

(© BMK/StW)

Based on the many initiatives that the Ore of the Alps UNESCO Global Geopark has implemented in recent years regarding soil protection, it was awarded the ERDREICH (= ground soil) PRIZE in the category Participation by Federal Minister Leonore Gewessler. The Geopark's preamble, includes the guiding principle "All people should be aware of the importance of soils as the basis of life is presented prominently throughout the Geopark, e. g. in the tourist offices, museums, mines, restaurants and, of course, in the Geopark's Visitor Centre.

The Geopark communities of Bischofshofen, Mühlbach, St. Veit and Hüttau organized a series of target group-oriented action days on the topics of climate, environmental and soil protection and biodiversity. Excursions were organized to provide more in-depth information on these subjects. Currently, the exhibition «Soils and their importance for mankind» can be seen in the Visitor Centre in Bischofshofen / Schanzengelände, which was created in close cooperation with the Austrian Soil Alliance. In addition to the soil functions, the «Soil Types of the World» are presented. The different grain fractions (sand, clay, etc.) that build up our soils are available as haptic elements to «grasp».

Since 2021, the Ore of the Alps UNESCO Global Geopark has been working with the British research team from Basecamp Research to study the biodiversity of the soils in the Geopark. The same team is also associated with additional biodiversity investigations

in the Geopark's Earth System Science project «Moving mountains», which will be implemented on behalf of the Austrian Academy of Sciences in 2023/24.

Over several years, display boards have also been installed on the importance of soils and the preservation of biodiversity in the Geopark, as well as information provided by experts on soil degradation, soil use, etc. The Geopark works in this regard through a cooperation agreement with the University of Salzburg / Department of Environment and Biodiversity / Urban and Landscape Ecology.

The main focus of the activities of the Geopark team is divided into many topics for participation, as the local population is closely involved in the projects in the Geopark. Our target audience focusses mainly on pupils, students, and families, but of course also all interested people of any age.

The Geopark is limited in the actions it can initiate and can primarily only direct, educate, and raise awareness. However, the four Geopark communities are encouraged to take appropriate actions involving soil protection. For example, an extension of the Ore of the Alps UNESCO Global Geopark Visitor Centre is planned as a second floor to the existing building, which will not require any additional soil consumption/sealing.

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Exhibition «Soils and their importance for mankind» in the Ore of the Alps UNESCO Global Geopark Visitor Centre in Bischofshofen.

(© Horst Ibetsberger)



New panels inform about the "Great topics in environmental change"

(© Horst Ibetsberger)



Orígens UNESCO Global Geopark, Spain Chain of Values, a campaign to support local commerce in Orígens Geopark



The affiliated shops in the Orígens UGGp.

In response to the crisis triggered by Covid-19 in November 2020, we initiated a campaign named "Chain of Values" in the Orígens Geopark.

This campaign provided continuity to the actions started during the confinement #emquedoacasaimenlocal (#Istayhomeandeatlocal) #emquedo-acasaicomprolocal (#stayhomeandbuylocal) that facilitated the launch of an online sales platform.

The campaign had the objective to claim local consumption as a tool to ensure the survival of small businesses and preserve the associated values. In this sense, it was intended to expose the difficulties experienced by companies during a period when they could not carry out their usual activities and to remind consumers of the importance of conscious



Postcards illustrate the values used to support the campaign.

purchasing to help sustain the local economy.

To achieve these goals, the action promoted personal and collective values such as hospitality, enthusiasm, sharing, dedication, nobility, or joy, that could contribute to overturn the existing situation.

The proposal was prompted through a public/private partnership. Specifically, it was delivered by two cooperating bodies in the Geopark. These involve the programme "Al Teu Gust, aliments del Pallars" run by the Tremp City Council and the APAT Association (Tourism Professionals Association) related to catering.

The campaign was addressed to both, local and foreign consumers that could potentially make use of the website www.delpallarscasa.cat to purchase locally produced goods and included links to the online stores of other local producers. Many of the buyers were residents of urban areas with ties to the Geopark's territory. The website was active between May 2020 and February 2022. Purchases were high at the beginning of the pandemic and were maintained during the first few months of the return to "normal". However, its use declined significantly with the return of normality.

In conclusion, the Chain of Values campaign was another instrument that contributed to help local producers to overcome and survive the pandemic with new knowledge and tools to face possible future social crises.

<https://alteugust.com/cadenadevalors/>
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Packaging for the different local products.

Papuk UNESCO Global Geopark, Croatia Papuk Geopark's Geo Info Centre



The Geo Info Centre, the new visitor centre in the Papuk UGGp

(Photo by Kristijan Toplak)

The Geo Info Centre is funded by the project «Geo-Stories of UNESCO Geoparks» which is one of the most significant projects in the Papuk UNESCO Global Geopark.

Investment was supported by Operational Programme Competitiveness and Cohesion 2014-2020. Eighty-five percent of the approved grant was managed by the Croatian Ministry of Regional Development and EU funds, and the remainder by the Environmental Protection and Energy Efficiency Fund accompanied by the Croatian Ministry of Economy and Sustainable Development.

The main objective of the project was to improve and develop the infrastructure for continental tourism by implementing innovative presentation approaches. It is expected that the visitor numbers in the region will increase which will strengthen the tourist potential for that part of continental Croatia and contribute to positive economic effects for the local economy.

Geo Info Centre in Voćin is the starting point for getting to know the Papuk UGGp through a multimedia and interactive exhibition. To bring to life the many different aspects of the Papuk. The building is organized into three main themed areas: geology, wildlife and humans. The other important facilities for visitors include the Souvenir Shop, the Geobar Café and restroom facilities.

The most interesting attraction is the 6D cinema which uses state-of-the-art equipment and technology. In films of 15 minutes visitors experienced a journey through the life of Papuk from the present until the moment of the creation of our planet Earth. The 6D cinema



The 6D cinema in the Geo Info Centre.

(Photo by Kristijan Toplak)

creates the ambience with environmental elements (rain, wind, smells) and is enhanced by chair movements that are synchronized with the actions on the screen.

Papuk is the most geologically diverse mountain in Croatia. In order to bring the geological interpretation and understanding of Papuk rocks closer to the geology exhibition at the Geo Info Centre, a 3D model of Papuk's relief is projected on the Papuk geological map and 18 different rock types have been identified, from the oldest metamorphic (440 million years) to the youngest, such as tufa (formed only a few thousand years ago).

One of highlights of the Geology room is "Science On a Sphere", a dynamic animated globe developed by the National Oceanic and Atmospheric Administration (NOAA) of USA. "Science On a Sphere" uses advanced technology to visualize images of the atmosphere, the oceans and the continents, the moon and the solar system. It is possible to watch the geological history of the Earth, climate changes, crustal movements causing earthquakes, tsunami events, volcanic eruptions, atmospheric changes and ocean currents with simulation and animations.

More and more visitors come to a destination for an experience. Since opening in 2022, the centre has become an attraction using beautiful design and 21st century technology telling the fascinating story of the region with rich heritage.

By the end of the year the centre is expected to attract 20,000 visitors.

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The Geology room in the Geo Info Centre.

(Photo by Kristijan Toplak)



Pollino National Park & UNESCO Global Geopark, Italy The Pollino mountains as an archaeological landscape



Geophysical prospecting with a magnetometer system at the former pastoral camp 'Mandra Vecchia - Strumbuni', July 2022.

Soil studies of an erosion gully near the Palaeolithic site of Grande Porta di Pollino, July 2022.



the team applied this knowledge to reconstruct the practices of ancient shepherd groups, who probably used the same locations and mountain routes. Many springs, mountain routes and camp locations yield previously unknown material traces of human activities from the Neolithic, Bronze Age, Roman period, and Middle Ages. Perhaps the most astonishing discovery involves the concentrations of lithic tools left by Palaeolithic hunters at a major mountain pass at an altitude of 2000 m, a bottleneck on an important wildlife migration route. These early humans also exploited mountain resources, the local quartzite rock for their hunting toolkit, and game for food and hides.

Across this long chronological arc, from the Palaeolithic to the present, people in the Pollino have seen various climatological changes, demographic trends, natural disasters, technological developments, and political reorganizations. They reacted to these in different ways, increasing or decreasing their highland activities. The soil archive is our most important resource to unravel these human-environment interactions. At lower altitudes, the team has documented progressive deforestation and soil degradation in the Bronze Age and the Roman period, and also a sudden 'rewilding' related to depopulation, probably caused by the Black Death in the 12th century. The study of a well-preserved vegetation archive in a former mountain lake, provides evidence of grazing from the Middle Bronze Age onwards (ca. 1400 BC). Ongoing studies of these deposits will yield information on the scale, impact, and phases of human activity in the Pollino highlands, providing a new human perspective to the formation the Pollino highlands and its heritage. It is a zone of astonishing natural beauty, but also an invaluable archaeological archive that needs to be explored and shared with all.

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Extracting botanical samples for reconstructing the history of vegetation at the former mountain lake of Lago dei Moranesi, July 2020.



Rocca di Cerere UNESCO Global Geopark, Italy

Rocca di Cerere Geopark returns to outdoor activities



The end of the darkest period of the pandemic led not only to the reopening of the public places in the Geopark but also to the resumption of educational and training activities. Among these, the first professional training course for new Environmental Hiking Guides specializing in geotourism is very important.

The course, sponsored by the Geopark and Legambiente and created by Assoguide and National Civil Social Environmental Protection Agency (ENPACS), trains about ten young students who face 400 hours of theoretical-practical preparation and a difficult qualification exam.

In particular, among the various activities, in addition to the modules on Earth Sciences, Zoology, Botany, Ecology, group management, safety and first aid, the course included new and experimental disciplines such as the geotouristic presentation of the Geopark's geosites and Environmental Interpretation.

The Environmental Interpretation internship was held in October, thanks to the beautiful weather, with teaching provided by Giovanni Netto, founder and President of the Italian National Association of Naturalistic Educators and Environmental Interpreters (INEA) in collaboration with Luana Fidani and with the participation of the scientific coordinator of the Geopark and of the anthropology teacher Valentina Di Natale.

The students experimented with a holistic and systemic approach, following the motto "Telling about Life to Educate for Protection".

Thus the different disciplines have merged into a single, complex and exciting discussion about the



planet and on the complex networks that maintain the biosphere starting from the «Bones of Mother Earth», the geological heritage which, in our case, begins with the Triassic and gave life to the landscape we enjoy and experience today.

It is exciting to see how the approach to nature has changed, from the «normal» management of groups to the invention of attractive courses, made up of gestures, sensations, participation and sharing. The students rediscovered direct contact with the Earth, with the living, and with the soil.

The Rocca di Cerere UGGp will soon have a new, colourful and effective team of interpreters who will be able to lead visitors, schools and institutes to discover the magnificent heritage of "Gypsum, Sulfur and Myth".

The training project is closely linked with the creation, in an advanced way, of the structures of the interpretative meta-itinerary that the Geopark is developing.

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Discussing the signs of ancient lives in the remains of the medieval convent of Santa Maria dell'Artisina.



The group prepares to compose the circle of the landscape on the top of Monte Altesina.



The soil is interpreted in the woods, Gianni Netto in action.



Sobrarbe-Pirineos UNESCO Global Geopark, Spain

The new normal, the new opportunity in Sobrarbe-Pirineos Geopark



Discover the Geopark. Cultural heritage and geological excursion with school children: «Vero River Canyon». 22nd July 2022.

(Photo by Alberto Marín, Senderos Ordesa. Partner enterprise of Sobrarbe-Pirineos UNESCO Global Geopark)

The «new normal» in Europe is a time overshadowed by war, misunderstanding and an uncertain future. However, all the European Geoparks continue trying to face the same problems as always, and to promote the construction of a better, more harmonious future that allows people to enjoy the richness of each of our Geoparks as a community.

In the Sobrarbe-Pirineos Geopark, we are very aware that UNESCO's mandate is to use education, science, and culture as a means to inform, inspire and engage people all over the world to promote understanding and respect between human beings, between peoples and towards our planet.

In this regard, we network with other geoparks around the world and reflect on issues that are of vital importance for human life, on the processes that shape our planet, and on geo-conservation.

But above all, we work hand in hand with the local community, with the neighbours who live in our territory, who graze their flocks in its pastures, who grow their cereal in its fields and who accompany visitors canoeing down its rivers or in wetsuits gorge walk through its spectacular canyons.

We work with school children, who are proud to live in a Geopark and are passionate about the history of thousands of millions of years that Geology tells us in each rock and with the stories of the people who lived here for centuries.

We work with local agri-food producers, partner members of the Sobrarbe-Pirineos Geopark, who produce in an artisan way, with the highest quality standards and with total respect for the environment.

The local community participates in all the activities programmed by the Geopark (conferences, seminars, field trips, hikes, workshops...) and decides how our Geopark should develop, through processes involving citizen participation such as the new strategic plan developed in 2021.

For us, the «new normal» is a time to reinforce what we have always believed. Every person living

in this unique place, Sobrarbe, is part of a big family and our Geopark must improve the family's quality of life, scientific knowledge, and promote enthusiasm in young people to face their future in a rural territory marked by depopulation.

We have emerged from the pandemic period with renewed energy to strengthen the bonds of union and collaboration between different segments of our local community, and of course with the rest of the European and world territories which, under the umbrella of the UNESCO Global Geoparks programme, are determined to make a difference and, as UNESCO mandates, create in the minds of all the men and women of the world, the bastions of peace, through respect, geoconservation and community work.

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The 2nd Glaciers Festival. High mountain geological excursion: «Monte Perdido, face to face with the glacier». 15th October 2022.

(Photo by Xisco Vilallonga, from Pyrene365. Partner enterprise of Sobrarbe-Pirineos UNESCO Global Geopark)



Expoferia de Sobrarbe. Livestock and agri-food fair. 9th -11th September 2022.

(Photo by Sonia Sampietro Casasnovas. Sobrarbe-Pirineos UNESCO Global Geopark)

Swabian Alb UNESCO Global Geopark, Germany

A journey into Earth History – a self-guided tour through the Swabian Alb Geopark

The office of the Swabian Alb UNESCO Global Geopark has, for several years, certified exceptional geosites as geopoints. Among others these include caves, volcanic remains and quarry walls, where the stratigraphy of the Jurassic sediments becomes visible. The goal of the geopoints was, and is to illustrate to the public the region's high geodiversity and its approximately 200 million years of Earth History. The geopoints also provide tourist guides with sites to include in their tours.

The Covid-19 pandemic showed us, and the rest of the world, that guided tours might not always be possible. It also illustrated that people turn to the great outdoors when shops and bars are closed and long-distance travel is impossible. This led to many visitors in the Swabian Alb Geopark, who craved for new ideas on what to do in our fascinating landscape.

Thus in 2021, we re-evaluated the project "geopoints". We renamed it "A Tour through Earth History" and developed the concept of a self-guided tour through our wonderful Geopark. While each geopoint remains a site that provides insights into Earth History the story of the Swabian Alb is now told by showing the relationships between the different geopoints – taking the visitors on a self-guided field trip.

As a first step, we illustrate this Earth History on our new website. There, the geopoints are no longer sorted by certification date but are organized chronologically according to their geological



Geopoint sign with the QR Code leading to the Website with information about the geosite Blautopf

(Photo by Sandra Teuber).

era. This means, we start to tell the story of the Swabian Alb with the Jurassic and move from there to the present day. Each time frame is represented on one or more locations in the Alb where the visitor can see first-hand what Earth History looks like in the field. For now, visitors can start on the website and then go on a self-guided tour within the Geopark's landscape. Visitors, who stumble "accidentally" on a geopoint in the field, can also obtain the information related to this point, as each geopoint sign contains bilingual QR-codes in German and English that provide the information about the respective location. If they are interested in the topic, they might also start to look

for other geopoints.

In the coming years, we will continue work on the project, which will include a printed product but also workshops for teachers and others to increase the publicity of the project. We hope to raise awareness about the geosites, their meaning for humanity and their vulnerability through this self-guided field trip, where everyone can learn about and experience Earth History and its relationship with humanity, on their own, taking all the time they need to explore the regions past.

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Troodos UNESCO Global Geopark, Cyprus

The Kalopanagiotis Village is a strong geotouristic destination for physical and emotional empowerment following the Covid-19 pandemic



A panoramic view of the Marathasa Valley with the Kalopanagiotis Village (right) and the Agios Ioannis (St John) Lampadistis Monastery (down-left).

The Kalopanagiotis Village, which is located in the Marathasa Valley in the north-west part of the Troodos UNESCO Global Geopark (TUGGp), exhibits an exquisite combination of natural, cultural and geological heritage to stimulate the senses of the visitors.

The Byzantine Church that is included in the UNESCO list of World Heritage Sites (UWHS) with magnificently preserved frescos from the 12th century, a 16th century arch span stone venetian bridge and a picturesque village, were all built by the locals from natural materials. The exquisite beauty of this village stems not only from its unique architectural character, but also from the occurrence of a rare geological phenomenon, that is not identified elsewhere in the island's ophiolites.

Eleven alkaline to hyper alkaline sulfur springs occur along the banks of the River Setrachos at the Kalopanagiotis Village, a few tens of metres south of the "venetian bridge" that until recently connected the village with the Agios Ioannis (St John) Lampadistis Monastery (UWHS). The springs are incompatible with the surrounding lithologies and occur in close



The 16th century arch span stone venetian bridge

proximity with the gabbro - sheeted dykes contact.

Studies have shown that the sulfate salt concentrations, which varies between adjacent springs, is indicative of heterogeneous preferential fracture flow. The most probable explanation for the increased concentration of sulfate salts, as well as sodium and chlorite ions is related to the rather increased rock-water contact time during percolation, the oxidation of sulphide minerals, which are present in the upper dyke sequence and partial mixing with older connate water with a salinity approximately 40% that of sea-water.

The healing properties of the waters, such as their beneficial effects on digestive disorders, and skin and rheumatic diseases, were known since antiquity. The whole area was part of the ancient Kingdom of Soli whose kings used the area as their wellness resort and hunting grounds. It is believed that a temple dedicated to Asclepius, the ancient god of health and medicine, was located at the same site, where the Agios Ioannis (St John) Lampadistis Monastery stands today.

This unique, for the island's ophiolites, geological phenomenon resulted in the development and prosperity of the area since antiquity. This ancient tradition survived for centuries and is still offered to visitors and locals in the luxurious hydrotherapy resorts in this historic spa village of Kalopanagiotis.

Furthermore, visitors can experience the strong gastronomic tradition in small taverns, enterprises and coffee shops, visit the local museums and walk the seven nature trails, which connect the most significant cultural and natural elements that are scattered in the Marathasa Valley and are surrounded by rugged mountain peaks.

A very empowering experience that is required by everyone in order to combat the difficult times that we have suffered during the COVID-19 pandemic.

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The Agios Ioannis (St John) Lampadistis Monastery (UWHS).



The karst spring Blautopf is characterized by its intense blue colour

(Photo by by Gregor Lengler).

TERRA.vita UNESCO Global Geopark, Germany

New geoconservation measures at the Dinosaur Tracksite Bad Essen-Barkhausen



The Dinosaur Tracks of Bad Essen-Barkhausen were discovered on a bedding plane in a quarry at the Wiehen Hills in 1921 (TERRA.vita UNESCO Global Geopark, NW Germany). At that time, the tracks had already been exposed on the surface for nine years. The bedding planes were tilted sub-vertically and the host rocks were densely jointed during Late Cretaceous uplift. The dense nature of the joints prevents removal of the tracks. Consequently an in-situ fossil geosite has been established.

The dense joint set of the silty rock hosting the dinosaur tracklayers and the high leaching potential of the underlying claystone also pose a challenge to the in-situ geo-conservation. The conservation of the rocks is further impeded by the continuous growth of vegetation in the joints and by extensive physical weathering (e.g. due to strong evaporation in humid summers and frost in winters). Therefore, the dinosaur tracklayer requires regular sealing, impregnation, and vegetation removal. In the first decades after their discovery, the dinosaur tracks were merely preserved as plaster casts. In-situ geo-conservation has only become a common practice since the 1960s. Since then, the geosite has undergone regular protection measures including impregnation, cement slurry injections, setting up a drainage system and the construction of a glass roof.

In 2021 and 2022, new geo-conservation measures were established. Firstly, the vegetation was removed and the tracklayer was cleaned. To stabilize the top of the quarry where the rocks had begun to disintegrate, the edge of the outcrop was cemented and a concrete bar was installed. Furthermore, two new concrete drainage systems were created and the existing drainage bar restored. Joints and gaps between tracklayers were sealed with a lime-based joint mortar. This special agent allows moisture to be released from the rock and in



Cementation of the edge of the outcrop.

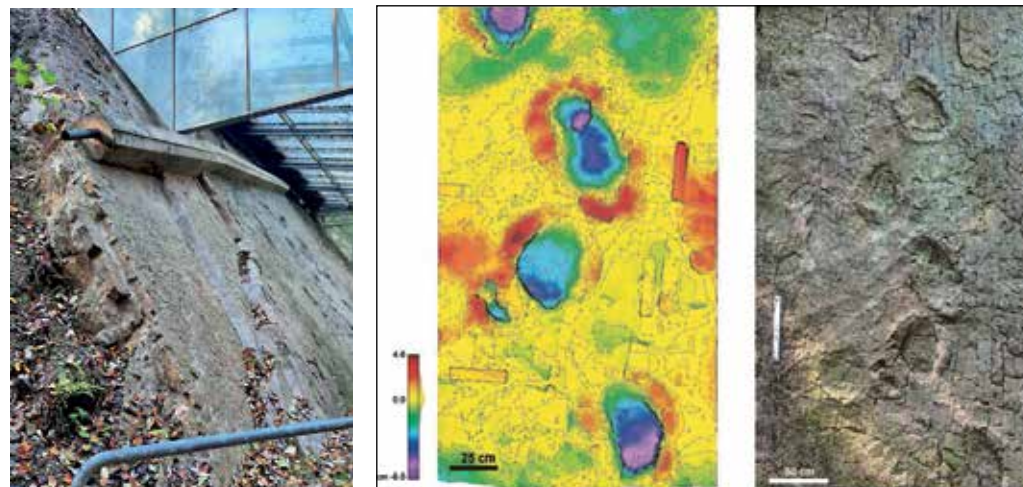
(Photo by Natur- und Geopark TERRA.vita)

turn reduces the risk of congelifraction due to frost.

The removal of vegetation revealed additional dinosaur trackways that had not been visible for decades and that had not yet been described scientifically. Christian A. Meyer (University of Basel) and Martin G. Lockley (University of Colorado Denver), both specialists in dinosaur ichnology, conducted large-scale photogrammetric measurements of the newly exposed dinosaur tracks for the first time. Based on the measurements, they revised the taxonomy of the footprints, gained new insights into the Late Jurassic palaeobiogeography in Central Europe, and published their new data in the scientific journal PalZ (Paläontologische Zeitschrift), volume 95(3).

In summary, the new geo-conservation measures not only made the dinosaur tracks more resistant to weathering for the next few years, but also provided new palaeontological insights.

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False colour and contour map, and rectified orthophotograph of a sauropod trackway that is now attributed to *Parabrontopodus barkhausensis*. Modified after Meyer et al. (2021), PalZ 95, based on the original data.

Gaps between tracklayers were sealed with a lime-based joint mortar.

(Photo by Sebastian Paetzke, Paetzke Gmb).



Villuercas-Ibores-Jara UNESCO Global Geopark, Spain

Back to The Normal: the Mayors' Forum in Villuercas Ibores Jara Geopark



The President MR. Carlos Carlos with the mayors.

Although the association of municipalities of Villuercas-Ibores-Jara are represented in the Geopark Council, in 2022 the president proposed a meeting with all the mayors as a good opportunity to return to normality after the hard months of the pandemic.

The Council is the major body for decisions involving strategic and action plans in the management of our Geopark. It consists of the organizations of the territory: the LEADER Group, the association of municipalities and the business association, the government of Extremadura (with the departments responsible for the different UNESCO Global Geoparks objectives) and the Provincial Council of Cáceres as the entity with the responsibility for the Geopark to UNESCO. In addition, the University of Extremadura, and the Geological Association of Extremadura are included as scientific members.

Nevertheless, the direct relationship with the mayors has always been considered of great importance. That is why this meeting was designated as the «Villuercas-Ibores-Jara UNESCO Global Geopark Mayors' Forum».

The Forum's purpose is to deal with issues that directly relate town councils with the Geopark's annual Action Plan, either for providing general information on management or for evaluating the possibilities of working in certain activities whose success depends largely on the active participation of local entities. Furthermore, it strengthens the space for relationships between the mayors with the presidency and the Geopark's director and staff. A type of relationship that achieves the best

Geopark leadership in the territory.

During the session, topics related to general information on the Geopark's Programme, participatory management and national and international cooperation were discussed. Some of the latest activities carried out in which the municipalities were concerned were also studied. For example, the updating of the Conservation Plan for the Geopark's geological heritage, in which all the geosites and itineraries were considered. Their maintenance is dependent on collaboration and surveillance provided by the municipalities. The Conservation Plan does not create restrictions but needs to be known by the locals and by the town councils in order to take care of these important sites. In order to pursue these tasks the mayors were provided with the printed Geopark Guides about the geosites, natural sites and cultural sites. In addition, they were informed about new initiatives to produce guides for the Geopark's orchids and intangible cultural heritage. The intangible cultural heritage is directed, with the aid of data and images, by the General Directorate of Cultural Heritage with the participation of the town councils.

After the success of the first session, the Mayors' Forum has been established among the Geopark's advisory bodies as the Education and Scientific Committee. This will provide a new addition in updating the collaboration agreement for the Geopark's management.

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The meeting of the Mayors' Forum.



The maintenance of the geosites, a task for the municipalities.

Vis Archipelago UNESCO Global Geopark, Croatia

Back to agriculture in the Vis Archipelago Geopark

Throughout history, the inhabitants of the Vis Archipelago Geopark have been engaged in fishing and agriculture which mostly involved viticulture. While tourism began to develop intensively in the coastal area of the former Yugoslavia in the period after the Second World War, Vis Archipelago was hidden from the public and closed to tourists because it served as a military base of the former Yugoslav People's Army. During that period the rest of the Croatian coast gradually reoriented activities from agriculture to tourism and began to rapidly develop economically, but Vis Archipelago stagnated, which resulted in mass emigration of the population. With the breakup of Yugoslavia in the early 90s the outdated agricultural practices in the Vis Archipelago totally collapsed. However, the opening of this area to the public initiated the development of tourism which was already quite developed in the rest of the country. The earnings from tourism soon attracted almost all the inhabitants of the Vis Archipelago, and only a few continued to engage in agriculture.

The beginning of the coronavirus pandemic in 2020 resulted in panic on the small remote islands that depended almost exclusively on the income from summer tourism. The lockdown, the sudden



The grape Harvest on Vis Island.
(Photo by Filip Prelec)

interruption of tourism and the fear of food shortages motivated the population of the Vis Archipelago Geopark to return to agriculture and traditional fishing. Numerous families began to cultivate their abandoned fields and vineyards. Tourists showed a great interest in local products and traditional fishing methods. Residents of the Vis Archipelago Geopark recognized the potential of local food production and continued to cultivate the land and offer their authentic island products.

Vis Archipelago Geopark, as a GEOfood brand member, continues to encourage the local population to engage in agriculture and fishing, for which there is increasing interest from both the local population and tourists. While digitalization and virtual socializing became the new normal for most of the world, the complete opposite is happening in our Geopark. For us, the new normal is a return to tradition, but in a modern way. Modern land cultivation techniques are introduced, new food recipes are devised and the benefits of the internet and mobile applications are used for the promotion and sale of local products.

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The traditional fishing boat Gajeta Falkuša used on Vis Island.

(Photo by Filip Prelec)



Vulkaneifel UNESCO Global Geopark, Germany

Soils in Vulkaneifel Naturepark and UNESCO Global Geopark – the fiery and icy past underneath our feet



In the aerial photo, the large-scale distribution of the ice wedge structures is very clearly visible on the basis of the darker coloured, wide-meshed polygon network..

(Photo edited by M. Lorenz).

Soils are much more than just the ground we stand on – they are an entire ecosystem. There can be more living creatures in a handful of soil than there are people in the world. Soils play a critical role in the survival of people, plants and animals. Water, carbon and nutrient cycles in soils are important ecosystem services and part of the natural balance. Besides natural and beneficial functions, soils also reveal past climate conditions and land use practices. As many people seem to be unaware of the numerous functions of a soil, Vulkaneifel UGGp launched a series of information panels explaining different soils that can be found in the Geopark, e. g. the ice wedges near Trautzberg.

Soils are formed by physical, chemical and biological decomposition processes that break down rocks over time. In Vulkaneifel, in many places, the rocks that decomposed to form soil are of volcanic origin. The fiery past of the last 400,000 to approximately 10,000 years is what makes the region so special. The youngest volcanic eruptions in Vulkaneifel occurred during the last ice age when, in contrast to Scandinavia and the Alps, Vulkaneifel remained ice-free. During this time, the subsoil was subjected to permafrost and thawing processes in response to changing climates. The already existing soils were significantly reshaped by freeze-thaw processes and distinctive traces of this can still be seen today near Trautzberg. Typical soil structures created by glacial processes are deformed soil layers, frost weathering, frost heaving and so-called ice wedges. Ice wedges, which form in response to the enlargement of frost fractures during repeated freeze-thaw cycles in soils exposed to permafrost conditions, can be preserved as sediment filled ice wedge casts. A network of triangle-shaped, predominantly loess loam filled



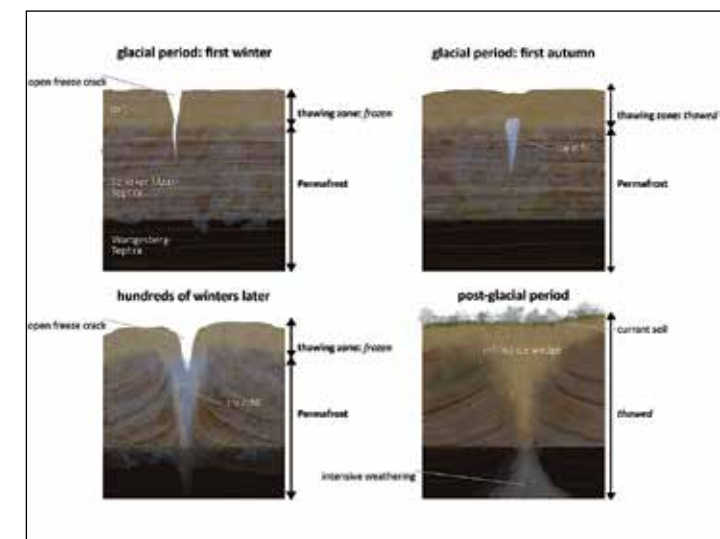
Large ice wedge pseudomorphs and other cryoturbation phenomena, such as choke structures in the Sprinkler maar deposits, are evidence of a long period of intense and long permafrost dynamics.

wedges, observed on aerial photographs, cover wide areas in the Trautzberg area near Strohn. Each wedge penetrates to depths of several metres in the tephra rich subsoil of Sprinkler Maar.

The process of soil formation is never finished. Land use practices, use of fertilizer or pesticides, contamination with e. g. microplastics will influence soil health. Soil is the essence of all terrestrial life, and is critical in the delivery of major ecosystem services for human wellbeing and nature conservation. After all, many of the resources we use, particularly our food, comes from the Earth. In short, soil is an indispensable basis for life - for us as well as for future generations.

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Ice wedges arise as a result of repeated freezing and thawing cycles over centuries / millennia



Gea Norvegica UNESCO Global Geopark, Norway

The Educational programme in the schools' backyards in Gea Norvegica Geopark



Project logo for Geologist and Scientist for a Day.

Due to the schools' tight budgets, it is important to offer educational programmes within their financial limits. During the last two years, we therefore focussed on implementing educational programmes within a short distance from the schools to prevent the need for busses or other transportation. The programme presented in this article focuses on connecting geology and biology in the schools' backyards.

The programme in question is designed for 8th graders with the title "Geologist and Scientist for a Day", where the fundamental idea is to use the schoolyard as a place to do fieldwork, and sample both geological and biological material for later study in a laboratory. We try to make the field- and lab work as authentic as possible and use the sampling methods and lab exercises that geologists and biologists use in their profession.

Sampling a tree core to see the annual rings pattern.



Together with the local science centre we made a workbook divided into three parts: pre-work, field work and lab work. The pre-work is done by the pupils before we arrive at the schools, so they have some background knowledge about the topics included in the programme. This includes an introduction to the Geopark, characteristics of the main types of rocks and the use of web maps.

For the field work, the pupils are divided into groups of four. The aim of the fieldwork is to collect three different rock samples and learn to recognize the characteristics of the three main types of rocks. For example, recognize magmatic crystalline rocks, metamorphic foliation, and sedimentary layering. The groups also take one sample of a tree core, preferably from a pine tree.

The week after the fieldwork, we return to the schools to complete the lab work. Equipment for the lab work is chosen so it can easily be transported and set up in the classrooms. The rock samples are tested for magnetism with the use of magnets, radioactivity with the use of a Geiger counter, and exposed to hydrochloric acid to test for calcite. We provide some digital lenses, which make it possible to study the samples in more detail. The tree cores are used to determine the age of the trees by looking at the annual rings. They also discover in which year the tree experienced maximum growth, and relate this to the weather conditions during that year.

We are experiencing that schools often hesitate to bring classes outside, due to the lack of teachers needed to control a full class. By inviting classes outside for educational programmes, the geoparks can have a key role in local education.

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Pupils pursue geological and biological fieldwork.



Lesvos Island UNESCO Global Geopark, Greece

Educational and awareness raising activities about wetlands and birds: an innovative project for the protection of our biodiversity in Lesvos Island Geopark



Kalloni wetlands, the most important wetlands in Lesvos for birds.

Lesvos Island UNESCO Global Geopark has been preparing the local community for the time after the pandemic and launched a new educational and awareness raising project entitled "Actions to inform and raise awareness about wetlands and birds". Although the project was launched during the pandemic, many open-air activities were organized aiming to highlight the ecological and environmental importance in conserving the wetlands and their potential to be used for alternative tourism.

Wetlands are one of the most important features of Lesvos Island UNESCO Global Geopark. Lesvos, according to research conducted by WWF Greece, has 63 wetlands. It ranks in first place for having the most wetlands among the islands of the Aegean Sea.

Wetlands are very important for migratory birds, for the fauna and flora, as well as for the enrichment of the groundwater table. At the same time, they act as generators for local, small-scale development through practices involving alternative

Birdwatching excursion for the public in Kalloni wetlands.



Awareness event for the public and local administration in Molyvos Village.

tourism.

Wetlands are the resting areas for the migrating birds that winter in Africa. These areas, with larger volumes of water from the winter rains, also attract migrating birds during the springtime. They are also sites of attraction for the birdwatchers who come from all over the world to see the birds, and who are also eager to explore the wetland areas.

During the project, the Natural History Museum of the Lesvos Petrified Forest and the Kalloni Environmental Centre have initiated a series of educational activities and events in cooperation with local stakeholders, local associations, the Region of North Aegean and the Municipality of Western Lesvos. These events aim to educate school students and the public but also to spread awareness about the value and importance of conserving the Geopark's wetlands. The project also includes organized birdwatching excursions for local people and visitors and educational programmes for school students. The visitors and students can, with the help of binoculars, special equipment as well as through the tracking devices placed for ringing birds, acquaint themselves with the wetlands and encounter the animals that live in them (dragonflies, frogs, sliders, birds).

The project is implemented within the frame of the programme «Actions to promote protected areas of Lesvos», funded by the Regional Operational Programme "North Aegean 2014-2020".

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Vikos-Aoos UNESCO Global Geopark, Greece Advancing geoheritage education in Vikos-Aoos UNESCO Global Geopark: A review of the 1st Summer School



The Vikos-Aoos UNESCO Global Geopark (UGGp) is part of the UGGp network since 2015. Previously, several activities (e. g. field-trips, social events) have been organized aiming to promote the geoheritage concept and draw connections between geosites, biodiversity, and human activities. In order to advance these efforts, the contribution of research and education is crucial. Thus, Epirus S.A., the Geopark administrator, collaborated with the School of Geology of the Aristotle University of Thessaloniki to organize the 1st Summer School of the Vikos-Aoos Geopark.

The call for participation was open to students from various natural science disciplines. Overall, 85 applications were received from students affiliated with 15 institutions in Greece and abroad. Based on predetermined selection criteria (e. g. education level, research interests), 39 participants were chosen including six PhD, fifteen MSc, and eighteen senior undergraduate students. The Vikos-Aoos Geopark incorporates major geological features, contained in 51 designated geosites, which include, amongst others, the karstic gorges of Vikos and Aoos, the unique Amaranthos steam geothermal field, the Konitsa seismogenic fault zone, and remnants of an old Mediterranean glacio-karst landscape. Nevertheless, the summer school's educational programme was not confined only to geological aspects. The teaching modes included eight lectures delivered by seven lecturers, as well as two field-trips. Lectures were focused on geological and hydrogeological features, the research and management of geoparks and protected areas, geoarchaeology and building stones, and on physical dating methods. Field-trips occurred along Vikos Gorge, Voidomatis River, and the Konitsa fault. Additionally, eight presentations were held by the participants on related topics. Participation was free, accommodation and meals were covered by the Municipality of Konitsa, while transportation was provided by Epirus S.A.

The summer school was assessed through an online questionnaire consisting of predefined weighted questions and free-text fields and achieved a ~74% response rate. The main outcomes are summarized as follows: 1) most of the participants (>93.1%) were content with the lectures and found them very interesting and relevant, while the majority also found the programme quite intensive with respect to their expectations; 2) all the participants perceived the necessity for the field-trips, most of them found the field-trips absolutely or very relevant, as well as intensive and physically demanding. In addition, the participants regarded the collaboration between students of various disciplines and levels as fruitful. All participants strongly supported the continuation of the Summer School and stated that they would wholeheartedly apply again.

A geopark should proactively seek the advancement of scientific knowledge and the successful interaction with local communities. Various educational programmes (e.g. summer schools) can effectively bridge these targets. Therefore, the organizers of the 1st Summer School of the Vikos-Aoos UGGp aim to establish this as a regular international event with a different focus each year and enhanced field-trips.

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Participants stood for a commemorative photo in front of a fault surface along the active Konitsa fault zone.



GeoMôn UNESCO Global Geopark, Wales, UK, & Lanzarote and Chinijo Islands UNESCO Global Geopark, Spain

An exchange of gifts and ideas between two insular UNESCO Global Geoparks



Cynthia and Elena exchanging gifts and ideas just before the covid 19 lockdown.

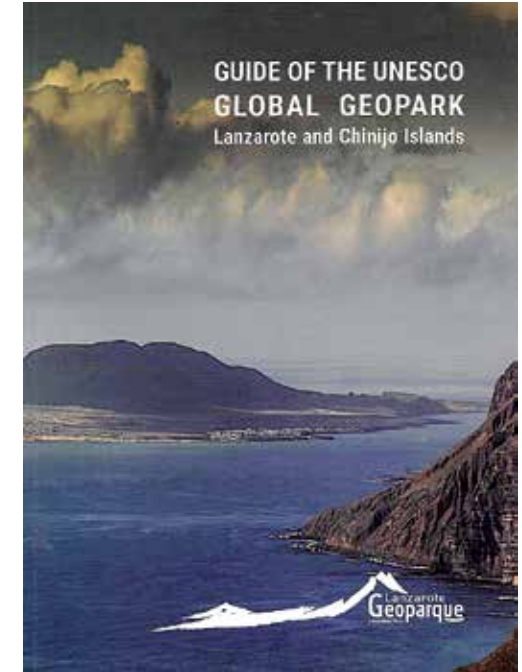
GeoMôn bookmark a bilingual versatile resource which can be adapted to any geopark and any language.

GeoMôn Geopark, Lanzarote and the Chinijo Islands Geoparks have a vital similarity. They are both complete island Geoparks. For some years they have been collaborating and exchanging resources.

In February 2020 Professor Cynthia Burek who holds the education portfolio for the GeoMôn Geopark met with Elena Mateo Mederos from Lanzarote Geopark to exchange two resources which could be used by other geoparks.

GeoMôn has produced a very versatile bilingual (Welsh/English) laminated bookmark, which exhibits a geological timescale, photographic scale, and a ruler. The bookmark is waterproof and can be used outside. It is a good example of subliminal publicity as it states clearly in both English "GEOMÔN UNESCO GLOBAL GEOPARK", with the strap line "Safeguarding Welsh geodiversity", and Welsh "GEOMÔN GEOPARC UNESCO BYD-EANG" and "Yn diogelu geoamrywiaeth Cymru". This spreads the word subconsciously about geoconservation to tourists and locals alike, as people show friends their holiday pictures using the photographic scale. It has the UNESCO logo for the Geopark clearly displayed on both sides. This was made freely available to delegates at the 45th European Geopark Network meeting in 2022.

Lanzarote Geopark has produced a very interesting geological history of the island in English. It is entitled UNESCO Global Geopark Lanzarote and



Lanzarote booklet front cover looking toward La Graciosa island.

Chinijo Islands. It has many pictures and diagrams to explain the volcanic history of the island. The first section describes what a Geopark is with maps and cross sections. The second chapter describes the Geological Heritage and provides a brief description of its 49 terrestrial Geosites and 19 marine sites. Chapter three deals with the Cultural Heritage from salt making to wine production and art. It also highlights the sites developed by Cesar Manrique, a self-styled geoconservationist. Chapter four deals with the unique biodiversity of the island of Lanzarote that was designated as a UNESCO Biosphere Reserve in 1993. Chapter five is entitled Protected Natural areas, while the last section six is called Practical guide and offers details of the museums and information sites, dealing with aspects of the island's unique ecosystems and landscape.

These two resources are very versatile and could be transferable to other geoparks.

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Buzău Land New UNESCO Global Geopark, Romania

Telling stories about forty million years of geological history in Buzău Land Geopark and its People

Buzău Land UNESCO Global Geopark is a sustainable development territory located in the Carpathian's Bend Area, in Romania. It is an entirely rural area covering approximately 1036 km², which overlaps with the administrative boundaries of 18 communes and is part of the Buzău County, one of the administrative subdivisions of Romania.

About 45,000 people live here, the earliest signs of habitation dating back to the Bronze Age. As a sustainable development territory, Buzău Land is a place where strategies and tools for sustainability are developed, experimented, and improved, and many are aimed towards developing sustainable tourism, in line with the Geopark principles.

The Buzău Land UNESCO Global Geopark is the result of a partnership between the Buzău Land NGO (professional, non-governmental entity), the Buzău County Council (the highest regional administrative authority) and the University of Bucharest (one of the oldest and most prestigious higher-education institutions in Romania).

Buzău Land spans an altitude difference of over 1,200 m, from 120 m at its southern border, to over 1360 m in the northern part of the territory. The southern part of the UGGp is characterized by large glacial depressions surrounded by rolling hills. Northwards, the valleys grow deeper and narrower and the rolling hills are replaced by abrupt cliffs, as the landscape grades from hilly to mountainous.

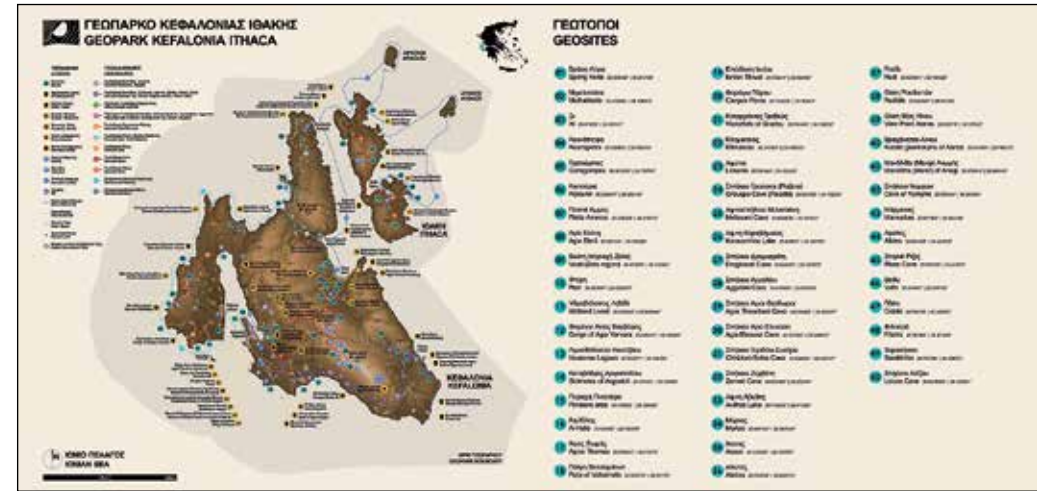
The main geological highlights of Buzău Land include the unique tectonic context of the area, and the plethora of rare and spectacular geological phenomena. Buzău Land is located at the intersection (continental triple-junction) of the East European Plate, the Moesian platform and the Tisia-Dacia block. It is characterised by active mountain-building in an oblique collisional setting, associated with the steep subduction of the ancient oceanic plate.

Moreover, it has many tangible geological highlights of great scientific, educational, and aesthetic value. The main highlights include active mud volcanoes, at four different sites, a wide variety of salt karst features, spectacular erosional features in volcanic ash deposits, glacial erosion and glacial



Kefalonia-Ithaca New UNESCO Global Geopark, Greece

Kefalonia-Ithaca Geopark: An Island Complex in the Ionian Sea, Western Greece



Map of Kefalonia-Ithaca UGGp with the locations of the geosites.

flood features, eternal flames, petroleum springs, and a wide variety of iron-rich and sulphurous mineralized springs.

The sandstone concretions formed in a 12-million-year-old delta deposit are also a popular site, and so are the Amber Hills. Here we can find the approximately 25 million years old largest amber deposit in the Carpathian Mountains and an endemic species of amber called rumanite. Along the Salt River Valley, visitors can walk through 40 million years of exposed geology, marking the transition from deep sea, to shallow sea, littoral, delta, lacustrine and terrestrial environments.

Another key feature of Buzău Land is the connection between the cultural and geological heritage, with immovable heritage being an important component of the tangible cultural heritage. It includes: old churches, monasteries, old cottages and mansions, ancient and medieval fortifications, ancient rock-hewn dwellings, or countless Bronze Age sites. The intangible heritage with fantastical stories inspired by natural phenomena is also a key component.

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The Large Mud Volcanoes.

(Photo by Razvan-Gabriel Popa)



Ulmet Sandstone Concretions.

(Photo by Razvan-Gabriel Popa)

Meledic Salt Plateau.

(Photo by Marius Iancu)

The Kefalonian fir *Abies cephalonica* can be seen in the Aenos National Park.



The Kefalonia – Ithaca UNESCO Global Geopark is an island complex (Kefalonia-Ithaca-Atokos-Arkoudi) belonging to the Heptanese islands of the Ionian Sea in Western Greece. Its surface area of 3,006 km² and includes a land area of 913,075 km² and a marine area of 2,092.9 km². According to the last census, 35,801 inhabitants were recorded living mainly in coastal settlements of the Island of Kefalonia. Ithaca has a population of 3,084. The local residents in the Geopark's area are mostly engaged in agriculture, fishery and tourism. Tourism, especially, plays an important role in the economic development of the area.

The Management Unit of Zakynthos and Aenos National Parks and Protected Areas of the Ionian Islands, Argostoli branch, which operates under Natural Environment and Climate Change Agency's (N.E.C.C.A.) Protected Areas Management, acts as the administrator of Kefalonia-Ithaca UGGp. Nevertheless, the activities of the Kefalonia-Ithaca Geopark are coordinated by an autonomous management board, consisting of one member from 16 local organizations.

Kefalonia-Ithaca UGGp is located at the westernmost part of the Hellenic arc where the African Plate is subducted under the Eurasian Plate. Thus, this region is characterised by significant tectonic activity and is recognized as the area with the highest seismicity in Europe. Additionally, intense karstification plays the dominant role in the Geopark's two predominantly limestone islands. This fact, combined with the intense tectonic activity and climatic conditions, results in the appearance of numerous underground and surface karstic features such as caves, sinkholes, dolines and poljes, which form



Melissani Cave Geosite.

a rich karstic system, mainly in the area of Sami, which without doubt hosts the most important geomorphologic features in the Geopark.

The Kefalonia-Ithaca Geopark is a place of intense historical interest, including numerous monuments and sites with human activity from the Palaeolithic Age to modern times. These include prehistoric city walls, Mycenaean cemeteries, Roman villas, as well as churches and monasteries which are important components not only of the religious expression of Kefalonia but also of its culture. Museums and libraries encompass various aspects of the culture of the island; other attractions include statues, and the 19th century buildings such as lighthouses and bridges. The intense history of the islands of Kefalonia and Ithaca, resulted in the formation of a very interesting and diverse cultural background with strong influences from each historical phase involving the transmission of history/myths/ and traditions. The island of Ithaca, for example, is known worldwide as the homeland of Odysseus from the Homeric sagas, the Iliad and the Odyssey. Finally Kefalonia and Ithaca have a unique natural heritage with a large variety of animals and plants. The most important protected area of Kefalonia is the Aenos National Park with Kefalonian fir *Abies cephalonica*, *Viola cephalonica* and the semi-wild horses. In Kefalonia-Ithaca UGGp we can also see many species of birds, the turtle *Caretta caretta* as well as the monk seal *Monachus monachus*.

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Mëllerdall New UNESCO Global Geopark, Luxembourg

Mëllerdall – a Geopark in Luxembourg

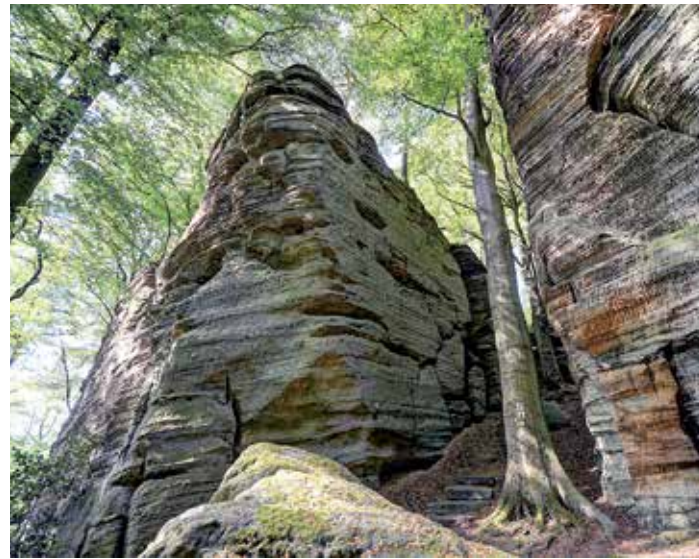


Mëllerdall Geopark is located in the east of the Grand Duchy of Luxembourg. Its name (“valley of the millers” in Luxembourgish) refers to the numerous mills that used to operate along the rivers and creeks. The Geopark, has 11 municipalities, about 26,000 inhabitants and covers an area of 256 km². The small-scale cuesta landscape is characterized by gently undulating plains and plateaus and deeply incised valleys. The Luxembourg Sandstone forms the centre of the synclinal structure on the north-eastern rim of the Paris Basin and is the most important source of drinking water in the region. It was deposited during the Lower Jurassic approximately 200 million years ago in a shallow marine tidally-influenced offshore sand-wave complex and forms particularly impressive natural rock formations in the region. The older Triassic Buntsandstein, Muschelkalk and Keuper deposits (mainly sandstone, dolomite and marl) are also part of the syncline. Floods, landslides and rockfalls are the most relevant natural hazards.

Since Stone Age times humans have contributed to the development of a cultural landscape. The region is known for its Middle Stone Age burials, medieval castles and the Hopping Procession of Echternach, included on UNESCO’s Intangible Heritage list since 2010. Old buildings constructed from rocks from numerous quarries are a testament to their former economic importance. The region has been developed for tourism for more than 140 years, and tourism is still an important factor in today’s economy. Although only a few important relicts of the original natural landscape have survived, e.g. the Tunbridge filmy fern (*Hymenophyllum tunbrigense*), growing in micro climate controlled open fissures in the sandstone, or individual pine trees on the dry edges of the sandstone plateaus, today’s cultural landscape contains numerous biotopes linked to the geology. Mardells, small closed depressions in the marly landscape form protected habitats. The pollen content in their sediments provides valuable archives of the climate and cultural history of the region. Orchard meadows link ecology and economy, as they are both biotopes

The cultural heritage is linked to geology: Larochette Castle is perched on a rocky promontory of the Luxembourg Sandstone and built from the same rock.

(© NGPM, U. Fielitz)



relevant to nature conservation and the basis of regional products.

The legal structure of the Geopark is a special-purpose association involving the 11 member municipalities and the state. It is legally anchored by the Law on Nature Parks (1993) and supported in the region by a partner network. The concept was developed through an intensive bottom-up process in which the legal aims were substantiated by regional objectives. The overall goals are the sustainable regional development while preserving and developing the important natural and cultural heritage. The region’s inhabitants, municipalities and businesses are supported in the implementation of these goals by the Geopark’s staff engaging with the departments of regional economy and regional products, and issues such as drinking water protection, education, ecological service, and projects in the field of climate protection, regional forests, dry stone walls. In this way the Geopark contributes to achieving the aims of the UN’s Sustainable Development Goals.

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Luxembourg Sandstone is the foundation of an impressive landscape whose geological and geomorphological history can be discovered on numerous hiking trails.

(© NGPM, U. Fielitz)

Extracurricular education for the next generation: how to build a dry stone wall.

(© NGPM, C. Martin)



Platåbergens New UNESCO Global Geopark, Sweden

Platåbergens, Sweden’s first UNESCO Global Geopark - great experiences in a unique landscape shaped by time



Sequence of bedded sedimentary rocks on the table mountain.

(Photo by Henrik Theodorsson)

A cyclist enjoys the view from the table mountain.

(Photo by Henrik Theodorsson)



for both quiet and excitement here.

You will always be close to powerful natural experiences thanks to a number of characteristic landscape types. You will find three unique environments: the peneplain (the basement rock surface) with its flat bare cliffs, the table mountains that tower over the plain with their unique rock layers, and ice age deposits creating a fantastic landscape. These environments contain a large variety of habitats. On and around the table mountains are coniferous forests, broadleaf woodland, screes, vertical cliff faces, alvars, bogs, and fens. Below the mountains are shallow floodplain lakes, undulating ridges, and well-preserved cultural landscapes. With all these different environments, it is no wonder that the table mountain region is littered with nature reserves. There are also two Naturums (visitor centres in nature) here.

But the varying landscape does not only offer powerful nature experiences. The region is filled with historical remains such as megalithic tombs, stone circles, and runestones. There are also many stone churches, monasteries, castles, keeps, and simpler dwellings. Many still stand, while others are in ruins. Some of Sweden’s most interesting historical discoveries have been made here in the table mountain region.

There are also many traces showing how stone became a livelihood. The history of the stone industry can be seen in many places in the region, as there are plenty of remains from quarries, lime kilns, millstone mines, and oil shale works. Visitors can also get a view of the stoneworkers’ lives thanks to several popular working life museums.

Welcome to some truly great experiences in a unique landscape shaped by time – find out more by visiting www.platabergensgeopark.se/en

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Mist rising over the deciduous, coniferous forests and cliffs of the table mountain.

(Photo by Henrik Theodorsson)



Ries New UNESCO Global Geopark, Germany

Ries Geopark - An Impressive Geopark in southern Germany



In the Ries UNESCO Global Geopark, the interplay between geology, landscape, nature and human influence is revealed, where the impact-formed geology created conditions essential for rare plants and animals.

The Ries UGGp encompasses the Nördlinger Ries with a crater basin and rim as well as areas of the Swabian and Franconian Alb where ejected materials are still preserved today. Just 100 km from Munich, Stuttgart, and Nuremberg, the Ries Geopark is predominantly rural, with 162,000 residents in an area of 1750 km².

The Nördlinger Ries was considered to be volcanic until 1960, when Drs Shoemaker and Chao discovered high-pressure minerals and identified the Ries Crater as the second proven impact crater on Earth. The best-preserved impact crater of its size, the Ries Crater, soon became the best researched impact crater. NASA astronauts first visited the Ries in 1970 for field training prior to the Apollo missions; today both ESA and NASA astronauts train in the Ries.

The Nördlinger Ries is a "mecca" for geotourists and a "must" for geoscientists due to its scientific importance as a model for Moon and Mars impact craters and its numerous geological first descriptions, including progressive shock-wave metamorphism and the impact rocks Suevite and Bunte Breccia. With the identification of Riesite, Ries Geopark became the first geopark to have a mineral named after it.

About 15 million years ago, the impact of an asteroid traveling an estimated 70,000 km/h formed the Ries Crater, a "complex" impact crater. The crater is a circular, level depression, about 25 km in diameter, with an inner ring of hills, surrounded by a megablock zone and a morphologically identifiable outer crater rim 30 to 150 meters high.

Various stages of development involving the impact, lacustrine sedimentation, erosion followed by



sand-loess deposition have shaped the landscape's appearance. In the largely unwooded Ries basin, rivers and streams alternate with fertile agricultural areas and dry grasslands. The vegetation reflects the characteristics of the soil.

The Ries is one of the few impact craters to have been continuously inhabited since the origins of human history; there are finds ranging from the Stone Ages to the Celts and Romans. Fortified hilltops, castles and ruins bear witness to princely sites in the Middle Ages. Nördlingen is considered a model of a medieval city.

Founded in 2003, the Ries Geopark has been a registered association since 2017, with membership open to its 53 communities and five districts. The professional management staff is supplemented by five volunteer Expert Teams. In 2019 the Geopark Ries e.V. and the Heide Allianz were successful in their grant application to the Bavarian Nature Protection Funds to purchase former excavation sites, to preserve biodiversity and safeguard species drift.

The marketing initiative Culinary Geopark Ries promotes sustainable economic development while preserving typical regional cuisine. Partnered restaurateurs, producers and refiners are also linked with the "village shop" network.

The Ries Geopark has a lot to offer scientists, visitors and residents alike. The dramatic power of an asteroid impact can be understood because the Ries Crater is large enough to experience but small enough to thoroughly investigate.

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View into the Ries Crater, training site for NASA and ESA astronauts.

(Photo by Dietmar Denger)

Former settlement of a Celtic prince, the Ipf with open-air museum.

(Photo by Dietmar Denger)



Salpausselkä New UNESCO Global Geopark, Finland

Salpausselkä Geopark - A Landscape Created by Water



Autumn cultural landscape and granitic Harmiokallio outcrop in Hollola.

(Photo by Municipality of Hollola)

Esker with a nature path in Vierumäki.

(Photo by Kati Komulainen / Salpausselkä Geopark)



The scenic "landscape created by water" is a significant source of water: The massive glaciofluvial landforms are vitally important for their abundant, renewable reserves of groundwater, which is filtered by the thick layers of sand and gravel and enjoyed as naturally high-quality drinking water. One of the main Geopark attractions, Päijänne National Park, protects the valuable archipelago nature of Finland's second largest lake, which is also the main water source for over a million people in the capital region.

The ridges and the water bodies have been used as passageways since prehistoric times, and most settlements were and still are located along them. The earliest of the area's 220 identified Stone Age settlement sites date back to some 10,500 years ago are also among the oldest in Finland. The rich cultural heritage includes also two medieval stone churches, water mills and manors from the 18th, 19th, and early 20th century, as well as old industrial settings turned into cultural hubs. The diverse Salpausselkä terrain is also a scene of international sports events. Lahti Ski Games, known as the Salpausselkä Games in Finland, have been held annually since the 1920s. The Nordic Ski World Championships have been held here seven times, more often than anywhere else in the world.

The 4506 km² Geopark territory which includes urban and rural environments is home to some 177,000 people, in six municipalities: Lahti, Hollola, Heinola, Asikkala, Padasjoki and Sysmä. Salpausselkä Geopark is managed by a regional non-profit tourism company, The Geopark's development is coordinated by the Geopark unit within the company, based on collaboration between the municipalities. The Geopark's operations include a business partnership programme for enterprises committed to sustainability and education for learners at different levels

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World Championships Nordic Ski in Lahti Sports Centre at Salpausselkä ice-marginal ridge.

(Photo by Lassi Häkkinen / City of Lahti)



Now a geosite, the former quarry "Altenbürg" is the likely source of the Suevite in the "Daniel" tower in Nördlingen.

(Photo by Dietmar Denger)

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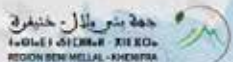
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