

Geoparks are a great way of enjoying the countryside while learning about our geological heritage and environment. Here we describe how the BGS is helping to spread the word about European Geoparks throughout the UK and Ireland.

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A walk in the park

Established in 2000, the European Geoparks Network (EGN) aims to protect geodiversity, promote geological heritage to the general public and support sustainable economic development within the area of each geopark.

There are 32 geoparks in the EGN all of which are endorsed by UNESCO. The development of geological tourism (geotourism) using a geopark's geological heritage will contribute to its sustainable development. For European Geopark status, a geopark must contain a number of geological sites of particular importance in terms of their scientific quality, rarity, aesthetic appeal or educational value. Most geoparks in the European network have a strong geological heritage, but their value may also lie in their archaeological, ecological, historical and cultural heritage. A typical range of activities of a geopark includes the establishment

of geological walking routes, guided education tours, schools outreach programmes, the promotion of geological heritage to the general public and geoheritage protection. There are currently eight British and Irish European Geoparks in the Network — Abberley and Malvern Hills, English Riviera and North Pennines Area of Outstanding Natural Beauty (AONB) in England; Fforest Fawr in Wales; Marble Arch Caves and the Cuilcagh Mountain Park in Northern Ireland and the Copper Coast in the Republic of Ireland; and the North West Highlands Geopark and Lochaber in Scotland. The BGS and the Geological Survey of Northern Ireland (GSNI) are involved with all of the UK geoparks, providing advice on geological heritage, education, and geotourism, and publishing geological maps and guides.



There are now eight European Geopark Network members in Britain and Ireland since the English Riviera Geopark became its newest member in September 2007.



Abberley and Malvern Hills Geopark: Geoconservation Summer School students enjoying the view (photograph: Cheryl Jones).

Abberley and Malvern Hills

Established in 2003, the Abberley and Malvern Hills Geopark is part of the European and Global Geoparks networks. The geopark covers 1250 square kilometres of Shropshire, Herefordshire, Worcestershire and Gloucestershire. In addition to the thousands of people who live and work there, the geopark attracts about two million visitors annually. It contains

thirteen geological Sites of Special Scientific Interest (SSSIs) and over one hundred Regionally Important Geological Sites (RIGS). Also, the Malvern Hills are a designated Area of Outstanding Natural Beauty (AONB) and the Wyre Forest is a National Nature Reserve (NNR). In addition to its geological value, the geopark contains a wealth of wildlife and archaeological, industrial and cultural heritage. The BGS is working on a

geological map of the geopark and an accompanying explanatory booklet, in collaboration with the Herefordshire and Worcestershire Earth Heritage Trust and the University of Worcester.

For further information:

www.geopark.org.uk

Copper Coast

The Copper Coast Geopark is located on the south-east coast of Ireland, in County Waterford. It extends between Tramore in the east, to Dungarvan in the west; more specifically between Fenor/Kilfarrasy in the east to Stradbally in the west and up to Dunhill in the north. The Copper Coast gets its name from the nineteenth century copper mines that lie at its heart. It comprises some 25 kilometres of spectacular coastline consisting of scalloped beaches and coves buttressed and enclosed by rocky headlands. Oceans, volcanoes, deserts and ice sheets all combined to create the rocks, which provide the physical foundation of the natural and cultural landscapes of the Copper Coast. The Copper Coast prides itself on its very strong roots within the local communities and has twinned with similar communities in the Vulkaneifel and Eisenwurzen European Geoparks in Germany and Austria. The Geological Survey of Ireland (GSI) and the GSNI have helped in the development of the geopark here and since 2004, GSI has had a full time geologist employed at the geopark.

For further information:

www.coppercoastgeopark.com

Fforest Fawr

At the heart of the geopark is an area of remote upland country known as Fforest Fawr ('Great Forest' in English) which was included within the Brecon Beacons National Park when it was designated in 1957.

The BGS worked closely with the Brecon Beacons National Park Authority and other partners, including Cardiff University, local businesses and the Sleeping Giant Foundation, to achieve European and UNESCO Geopark status for Fforest Fawr and surrounding lowlands. It is the first European Geopark in Wales, and the first area within a UK



Copper Coast European Geopark, Ireland (photograph: Keith Fitzgerald).

National Park to achieve this designation. After two years of preparatory work it was awarded European Geopark status at the EGN Conference in October 2005.

The application was enhanced by the recent publication of new BGS geological maps which cover much of the geopark area. The BGS is currently leading a project supported by the Aggregates Levy Sustainability Fund for Wales to deliver a series of Geotrail Leaflets; a 1:50 000 scale geological map for walkers of the whole

geopark (in the Earthwise series); and a detailed Classic Areas of British Geology 1:25 000 scale geological map of part of the area that is frequently used for geological field trips by the education sector.

For further information:

www.fforestfawrgeopark.org.uk

Lochaber

Lochaber Geopark, was launched in Fort William on 21 June 2007. The launch was performed by local surgeon, David Sedgwick, a descendant of Adam Sedgwick, one of the founders of modern geology. The bid for geopark status was led by a strong community group from the Lochaber area, which was supported by many organisations including the BGS as well as Highland Council, Scottish Natural Heritage (SNH), and the National Trust for Scotland.

The Lochaber Geopark encompasses some of Scotland's most famous geological and landscape features. These include Britain's highest mountain, Ben Nevis; the jagged peaks of Glencoe and the Mamores; the remote peninsula of Morvern and Ardnamurchan; and the spectacular islands of Rum and Eigg. The rocks and landforms of Lochaber tell the story of the past 1000 million years of history, including vanishing oceans, colliding continents, volcanic eruptions, and the shaping of the landscape by glacial ice.



Fforest Fawr: panning for gold at the Craig-y-nos Country Park during European Geoparks Week in 2007.



Marble Arch Caves are among Europe's finest showcaves allowing visitors to explore a natural underworld of rivers and waterfalls.

To geologists, Lochaber Geopark is perhaps best known for its ancient volcanoes — including Glencoe, Ben Nevis, Ardnamurchan and Rum. This was the area where the volcanic process of cauldron subsidence was first recognised, and research in Lochaber has underpinned the understanding of active volcanoes around the world. The fascinating story of the area's geology has been described for non-specialist visitors in the latest book in the SNH/BGS 'Landscape Fashioned by Geology' series, *Ben Nevis and Glencoe*.

For further information:
www.lochabergeopark.org.uk

Marble Arch Caves and Cuilcagh Mountain Park

The Marble Arch Caves (MAC) European Geopark became the first UNESCO European Geopark in the UK. The area is characterised by the distinctive sandstone summit ridge of Cuilcagh Mountain and provides some of the most spectacular

scenery in Fermanagh. The lower slopes of Cuilcagh Mountain contain Northern Ireland's finest upland karst, or limestone landscapes and associated cave systems. The GSNI and the GSI have been working with Fermanagh District Council and Marble Arch Caves since the late 1990s and have produced a range of popular geological literature for the area under the 'Landscapes From Stone' brand. They have led guided walks and given talks explaining the geological heritage of the area. Since 2005, GSNI has had a full-time geologist based at the geopark developing a full-programme of geological activities. Named as the number one visitor attraction in Northern Ireland in 2006, the MAC European Geopark is currently undergoing a two-phase expansion initially into other parts of County Fermanagh and afterwards southwards into County Cavan in the Republic of Ireland.

For further information:
www.marblearchcaves.net

North West Highlands

The North West Highlands Geopark is Scotland's first geopark, established in 2005. It extends from just north of Ullapool to the north coast at Durness, and includes some of Scotland's most spectacular scenery, from towering peaks such as Suilven and Foinaven, to near-deserted beaches at Sandwood Bay and Achmelvich. The geopark includes some of the oldest rocks in Europe (the Lewisian gneisses, at almost 3000 million years old); the Moine Thrust Zone, which is an internationally famous location for studying the deep structures of mountain belts; and superb glacial features, including evidence for fast-flowing ice streams within the last ice sheet.

The BGS works closely with the geopark and has produced various publications on the geology of the area, including a walkers' guide. A revised version of the classic Assynt Special geological map sheet has just been published, and BGS staff are currently working on teaching resources for local schools.

The North West Highlands Geopark hosted the 7th European Network Open Conference in Ullapool during September 2007. The theme was Landscapes and People: Earth Heritage, Culture and Economy. The conference was followed by a range of field trips within the North West Highlands Geopark led by BGS and geopark experts.

For further information:
www.northwest-highlands-geopark.org.uk

North Pennines AONB

In recognition of its world-class geological heritage and local efforts to encourage sustainable development, especially geological tourism, the North Pennines AONB became Britain's first European Geopark in 2003 and subsequently a founding member of the UNESCO Global Geoparks Network. The North Pennines AONB Partnership launched the first Geodiversity Action Plan for a UK protected landscape in 2004. Developed in close cooperation with the BGS, the plan is intended



A guided walk across the pristine sands of Oldshoremore Beach, North West Highlands Geopark, leads guests to exposures of Lewisian Gneiss which are among the oldest rocks in Europe.

to guide the conservation and interpretation of geological features in the North Pennines; BGS staff continue to serve on the Geopark Advisory Group. The plan has already provided the justification and strategic context for a major project, Rockworks, and continues to do so for other projects and initiatives. Rockworks is a four-year project aimed at making the most

of the area's amazing geology. The geology is brought to life in imaginative and exciting ways through children's clubs, events and trails, resources for schools, training events and evening courses, which also aim to support the local economy. Northern Rocks, the North Pennines Festival of Geology and Landscape, is a major event that runs for a fortnight in May every year and includes walks, talks, exhibitions, geological holidays and children's activities in which BGS staff are active.

For further information:
www.northpennines.org.uk

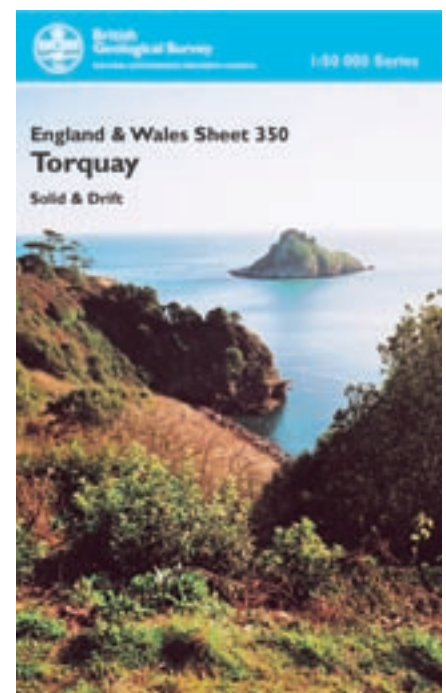
English Riviera

The English Riviera Geopark became thirty-second and newest UK member of the EGN at its conference in Ullapool in September 2007. The geopark is centred around Tor Bay and includes the towns of Torquay, Paignton and Brixham. This area is particularly renowned for the marine Devonian limestone on which much early work was undertaken by Sedgwick and Murchison. Kents Cavern showcave, in the limestone, has embraced its Quaternary history and some of the finds excavated here in the early twentieth century are the subject of current research to reassess human migration. Other classic geological sites, including Saltern Cove, Berry Head

and Daddyhole Cove all lie within the geopark, which is the first to have a largely urban population.

The BGS has actively supported the ERG application led by Torbay Council and the Torbay Coast and Countryside Trust (TCCT), and was represented by staff from our Exeter and Cardiff offices during the EGN inspection in early September. Of great assistance in preparing the submission document was the new geological map and sheet explanation (*Geology of the Torquay District*, 2003) resulting from the recent resurveying of the area, which completely revised the earlier stratigraphical terminology to provide modern baseline data.

For further information:
www.englishrivierageopark.org.uk



The 2003 re-mapping of the Torquay area provided essential new information for the English Riviera Geopark area.

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North Pennines AONB: exploring glaciated scenery and the Whin Sill at High Cup Gill.

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