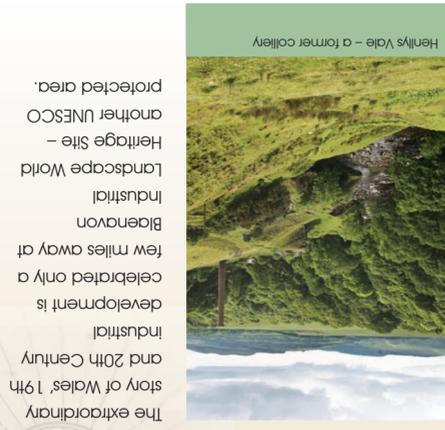


Geomon - Anglesey's Geopark
Forest Fawr is now one of two Welsh Geoparks since Anglesey joined the European Geoparks Network in 2009. A walk around the island's coastal path reveals its amazing geology and islanders' long relationship with the sea. Visit www.geomon.co.uk for more information.

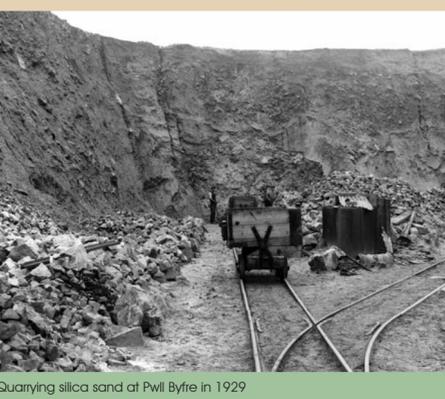


Careg Cennen Castle



Henllys Vale - a former colliery

The extraordinary story of Wales' 19th and 20th Century industrial development is celebrated only a few miles away at Blaenavon Industrial Landscape World Heritage Site - another UNESCO protected area.



Limelkins, Henllys Vale

Find out more

Forest Fawr Geopark is set within the Brecon Beacons National Park. For more information visit one of these centres:

- The Waterfalls Centre, Pontneddfechan**
Located at the head of the Vale of Neath and gateway to the Waterfalls area. With its Geopark exhibition this centre is your best introduction to the area. Tel: 01639 721795.
- The National Park Visitor Centre, Libanus**
Displays and friendly staff will help you explore the area, or relax and enjoy the fantastic views and popular tea rooms. Tel: 01874 623366 or e-mail: visitorcentre@breconbeacons.org
- Landoverey Information Centre**
This welcoming centre has all the information you need about where to stay and what to do in the Geopark. Tel: 01550 720693.

The following locations can also provide some information about the Geopark and are worth a visit in their own right:

- **Craig-y-nos Country Park** - enjoy 40 acres of woodland, meadows and riverside walks in historic landscaped grounds in the upper Swansea Valley.
- **Garwnant Visitor Centre** - Forestry Commission Wales' visitor centre & café set in the Cwm Taf woodlands. Tel: 0300 068 0300
- **Black Mountain Centre**, Bynaman - café and community centre at the foot of the Black Mountain. Tel: 01269 823400

Visit these web sites:

- www.fforestfawrgeopark.org.uk
- www.europeangeoparks.org
- www.globalgeopark.org
- www.visitbreconbeacons.com

For more information contact the Geopark Development Officer at: Brecon Beacons National Park Authority, Plas y Ffynnon, Cambrian Way, Brecon, LD3 7HP. Tel: 01874 624437 E-mail: information@fforestfawrgeopark.org.uk



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It's more than just rocks!

The Geopark is also about people and their stories.

People have been making use of rocks here for thousands of years - from the mysterious standing stones of our distant ancestors to Iron Age hill forts and from Roman roads to Norman castles. The coming of the Industrial Revolution led man to exploit the coal, silica rock, rottenstone and limestone found in the Geopark. The presence of quarries, mines and limekilns together with canals, tramways and railways for transporting these resources, bears witness to industrial activity on a large scale. Hill farms, fields bounded by dry stone walls and pillow mounds for breeding rabbits are evidence of flourishing agricultural activity. Towns and villages expanded with a growing population.



Pen y Fan

The area is well served by public paths and access please treat these hills with respect and follow the Countryside Code. Visit www.cwm.gov.uk for more information about access to the Welsh countryside.



Waterfalls Centre

You can enjoy the Geopark in many different ways - on foot or by bike, in spring, summer, autumn or winter. Remember - much of Forest Fawr is hill country - whatever time of year you visit, go prepared for changeable weather. Take care on wet and slippery ground beside rivers which can run cold and deep.



Gorn Goch - Iron Age hill-fort



Guided walk on Cribarth

Each of Europe's Geoparks is a protected landscape. Forest Fawr Geopark seeks to:

- promote local attractions to a wider audience and plays an active role in the economy of the area through the development of geotourism.
- work with local communities to help visitors and residents appreciate its diverse qualities and understand the need for its conservation.
- conserve and enhance the geology, geomorphology and landscapes of the area.
- develop the area's potential as a superb outdoor classroom and as a place for learning and research in the Earth Sciences.
- contribute to the development of the European and Global Geoparks Networks through working with other Geoparks.



Maen Llia - ancient standing stone

The Geopark covers the western half of Brecon Beacons National Park - some 763 square kilometres (300 square miles) in all. It takes its name from the upland area at its core which has been known for centuries as Forest Fawr - the 'Great Forest'. This is not in fact a large area covered in trees but an extensive tract of moorland which was once a royal hunting ground. You will, however, find plenty of attractive woodland in the valleys of the Geopark which surround the uplands of Forest Fawr, the Black Mountain and the central Brecon Beacons.

Where is Forest Fawr?



Rock detectives



Scarlet Elf Cup



Dipper



Sundew



Fan Hir

Each one of the growing international family of Geoparks is an area with an important and often extraordinary geological heritage. Geoparks are not just about rocks, however, they are also about people. Fascinating human stories emerge from their unique landscapes. Geoparks celebrate local legends and culture, archaeology and our wider relationship with the land. They are also first-class outdoor classrooms and places for scientific study. Forest Fawr Geopark became a member of the European Geoparks Network and the UNESCO Global Network in 2005.

What is a Geopark?

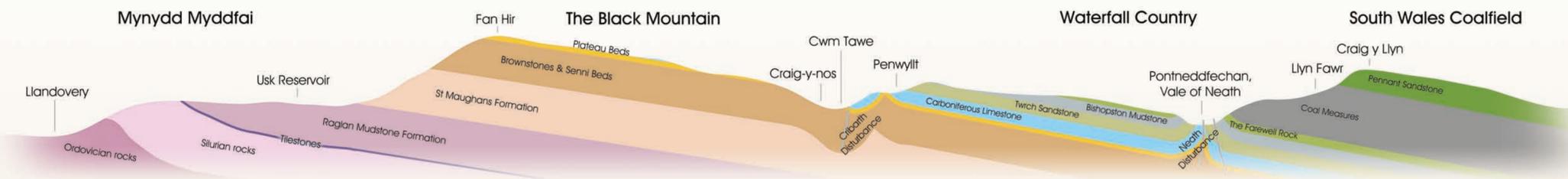
Fforest Fawr Geopark
Wales' First European Geopark



A landscape shaped by rock

A slice through the rocks of Fforest Fawr Geopark

along a line drawn southeastwards from Llandovery



Ordovician and Silurian rocks

The story starts here



Our oldest rocks are the steeply tilted sandstones, mudstones and limestones found in the northwest. They formed layer by horizontal layer in a sea called the Welsh Basin which once covered central Wales and which connected with a great ocean called Iapetus to the north.

A huge slow-motion collision took place between southern Britain and Scotland as the Iapetus Ocean closed up over millions of years. The rocks of Scotland, England and Wales, including those of the Welsh Basin were buckled, faulted and folded to form a Himalayan-scale mountain range - the 'Caledonian Mountains'. The more modest hills of present-day Snowdonia, the English Lake District and the Scottish Highlands are today's remnants of that once mighty range.



The Old Red Sandstone

Recycled mountains



The 'Caledonian Mountains' were rapidly eroded. Huge quantities of mud, sand and pebbles were carried southwards by large rivers to be deposited in arid low-lying areas and coastal plains. Collectively these mudstones, sandstones and conglomerates are known as the 'Old Red Sandstone'.

The uppermost beds of the 'ORS' are the 'Grey Grits' and 'Plateau Beds', seen on the flat mountain tops of the Brecon Beacons and Carmarthen Fans and the Fforest Fawr escarpment.

A thin band of flaggy sandstones known as the 'Tilestones' marks the base of the 'Old Red Sandstone' - their name Tilestones reveals why they were quarried at Mynydd Myddfai and other places along their outcrop.



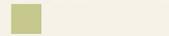
Carboniferous Limestone

Warm tropical seas



Shallow seas flooded the area at the start of the Carboniferous period. The warm equatorial waters allowed corals and many other animal species to thrive - their remains can now be found as fossils in the limestone which they helped to form.

There are several distinct types of limestone in the area. Some have been widely quarried for aggregate and for lime-burning, in connection with both agriculture and the iron industry. One of them, 'rottenstone' was used as an abrasive for polishing metal.

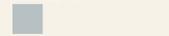


Twrch Sandstone

Silica mines & furnace linings



Once familiar as the 'Basal Grit', this hard pebbly sandstone was found to contain beds of sandstone containing 98% quartz or 'silica'. These pure sandstones were mined extensively around the head of the Vale of Neath. They were used to manufacture furnace bricks which are resistant to cracking at high temperatures.



Bishopston Mudstone

From deltas to gorges



Formerly known as the 'Middle Shales', this thick series of mudstones formed as great river deltas grew out into a tropical sea which deepened to the south. Together with the underlying Twrch Sandstone, the Bishopston Mudstone forms the Marros Group - the new name for the 'Millstone Grit series'. These rocks are best seen in Waterfall Country where the Mellte, Hepste and Nedd Fechan rivers have cut great gorges through them.



Coal Measures

Forest swamps



The youngest solid rocks in the Geopark consist of mudstones, sandstones and coal seams. They were laid down in equatorial deltas covered by dense rainforests. Plant fossils are common. A hard band of sandstone known as the 'Farewell Rock' marks the base of the Coal Measures - a 'farewell to riches' for any miner delving below this level for ironstone or coal. These mineral resources played a vital part in the industrial development of South Wales.



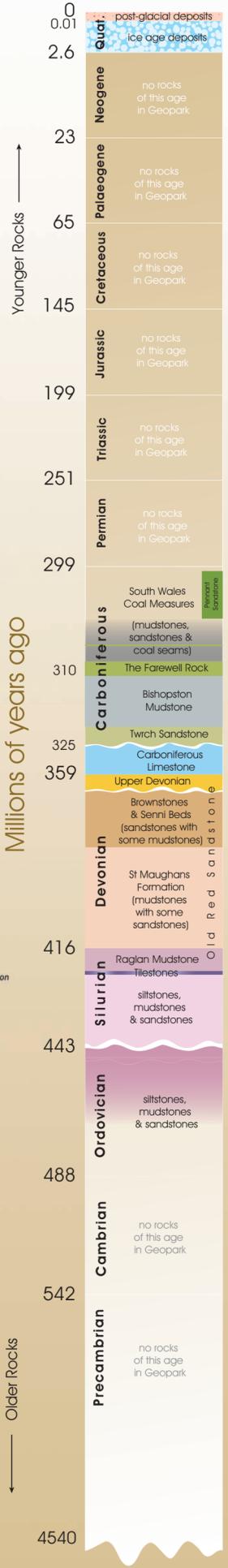
The Quaternary Period

A landscape sculpted by ice



Weathering and erosion over many millions of years began to shape the modern landscape. A series of ice ages during the last 2.6 million years carved out much of the scenery we see today. At the height of the last major ice age about 20,000 years ago, great rivers of moving ice ploughed down the valleys of the Usk, Neath, Towy and Tawe, fed in turn by smaller glaciers formed under the high peaks of the Black Mountain, Forest Fawr and the Brecon Beacons and the northern slopes of the Coalfield escarpment which border the Neath Valley.

The final retreat of the ice just over 11,000 years ago revealed a bleak and stony wilderness. As the climate warmed, so forests and their associated wildlife spread across Britain. Landslides occurred in many places as hillsides that had been over-steepened by glaciers slipped into the valleys under their own weight. Great expanses of peat such as at Waun Ffynnon Felen have formed since the last Ice Age.



Fforest Fawr Geopark

Rocks & Routes



Key to rocks of Geopark

- Quaternary**
 - Post-glacial deposits - peat, river gravels etc*
 - Ice Age deposits - glacial till, moraines etc*
 - * deposits are widespread but not shown on map or cross-section
- Carboniferous**
 - Coal Measures**
 - Pennant Sandstone
 - Lower & Middle Coal Measures - mostly mudstones
 - The Farewell Rock
 - Marros Group ('Millstone Grit')**
 - Bishopston Mudstone ('Middle Shales')
 - Twrch Sandstone ('Basal Grit')
 - Carboniferous Limestone**
 - Limestone
- Devonian**
 - Upper Devonian**
 - Plateau Beds & Grey Grits Formations
 - Middle Devonian**
 - not found in this area
 - Lower Devonian**
 - Brownstones & Senni Beds
 - St Maughans Formation
- Silurian**
 - Raglan Mudstone Formation
 - Tilestone Formation
 - older Silurian rocks
- Ordovician**
 - Ordovician rocks

The 'Old Red Sandstone' comprises the Devonian plus the Raglan Mudstone Formation of the Silurian. Old names of certain rocks are shown in brackets

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