

## 5.0 THE STORY OF THE BRECON BEACONS LANDSCAPE

### 5.1 Geology

- 5.1.1 The variety of geology which underlies the Brecon Beacons National Park reflects the changing conditions under which the rocks were formed, and the processes which have subsequently acted on them. Fig. 7. shows the geology of the National Park.

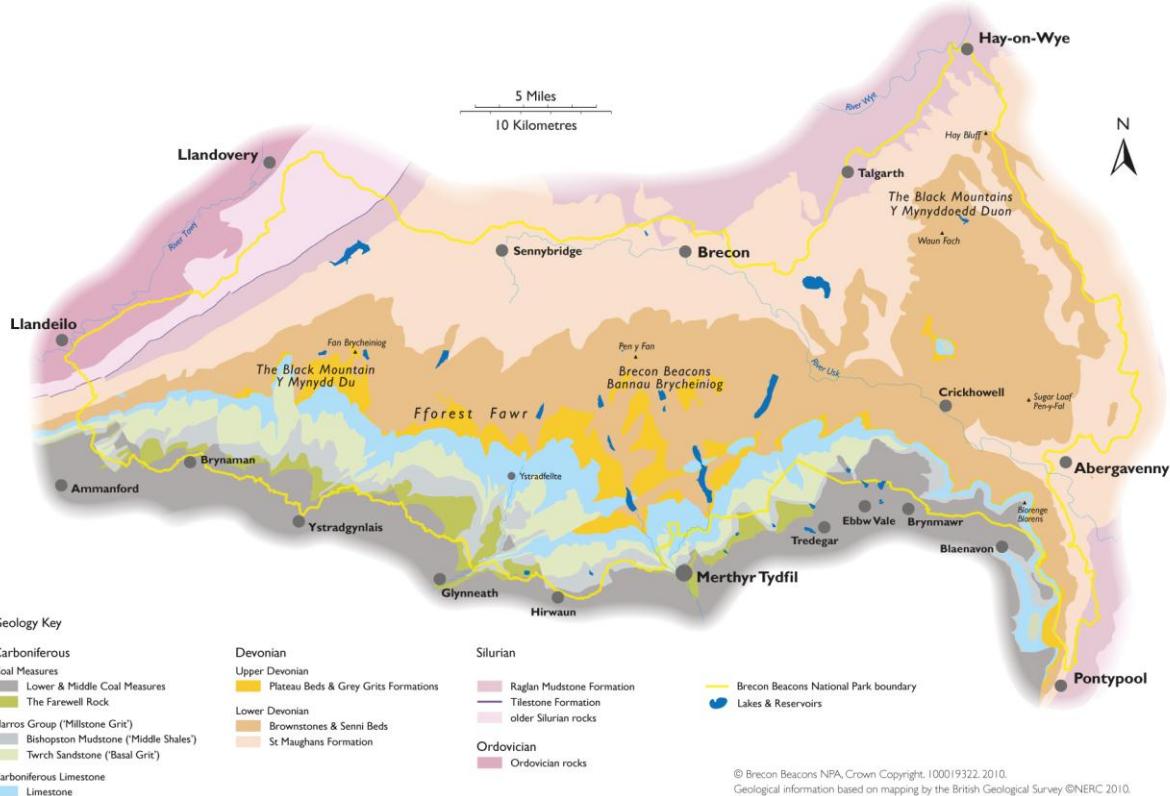


Fig. 7: Simplified geology map of the Brecon Beacons National Park

- 5.1.2 The oldest visible rocks (in the Towy valley near Llandeilo) are some of the oldest exposed rocks in Britain, dating from the Ordovician period. Generally, the oldest rocks are visible in the north and north-west of the National Park, with the exposed rocks becoming younger towards the south.
- 5.1.3 Different layers of sandstone were deposited in different environmental conditions. For example, the Old Red Sandstone visible in the north and north-west of the National Park was laid down in sandy desert conditions over 400 million years ago in the Devonian period. This sandstone weathers to create distinctive pinky-red soils. The harder Brownstones forming the distinctive northern scarp and flat-topped profiles of the Brecon Beacons were laid down later in the Devonian period. To the south of Pen y Fan, a layer of harder 'Plateau Beds' overlie the Brownstones. These were deposited in estuarine conditions and contain conglomerate rocks (a mixture of sand and pebbles) which are resistant to erosion and form the craggy ridges and 'table top' landform visible in this area.
- 5.1.4 At the start of the Carboniferous period (approx. 300 million years ago), the area which is now the Brecon Beacons was under a warm, shallow, tropical sea. In these conditions, limestone formed from the shells of dead sea creatures. These limestones occur towards the south of the National Park, and are grey in colour and rough in texture.

- 5.1.5 Later in the Carboniferous period, changes in environmental conditions resulted in the deposition of alternating hard sandstones and softer mudstones. Tropical forests grew and decayed, fossilizing seams of coal within layers of sandstone and mudstone known as the South Wales Coal Measures.
- 5.1.6 Subsequent earth movements have resulted in the uplifting of the area (during the Late Cenozoic era) and folding of the rocks so they are no longer flat, but sloping down towards the south. This has resulted in the asymmetric profile of the Brecon Beacons, with their steep northern scarp faces and smoother southern dip slopes.



*Petrified ripple marks In Old Red Sandstone, Pen y Fan summit*



*Fossil-rich limestone, Herbert's Quarry*



*Contrasting craggy limestone and smooth-profiled sandstone, Tawe valley*

## 5.2 Geomorphology

- 5.2.1 The rocks of the Brecon Beacons have been repeatedly covered by ice during the last two million years. Glaciers formed on the highest land and flowed downwards, creating the drainage system we see today. The underlying rocks were eroded by ice, creating a variety of distinctive features. Glaciated valleys, with steep back walls and sometimes small lakes, can be seen on many of the northern faces of the Brecon Beacons (e.g Cwm Llwch). Many of the floors of these valleys have a lumpy appearance due to the rocks and other debris dumped by the glaciers as they melted. Larger valleys – such as the Usk Valley – were also carved by glaciers, creating a classic U-shape landform. Rocks were also weathered by frost-shattering, often creating crags and scree slopes.
- 5.2.2 More recent erosion by water has also had a major impact on the landscape of the area, with streams and rivers creating the many V-shaped valleys. This process has often been more dramatic on limestone, where water has eroded the rock to form gorges, caves, waterfalls and smaller features such as sink holes. These processes are still continuing today.



*Cwm Llwch*



*Clydach Gorge*



*Active scree formation and water erosion, Llyn-y-fan Fach*

### 5.3 Early Inhabitants

- 5.3.1 The Brecon Beacons have a long history of settlement, with the earliest archaeological finds dating from the Mesolithic (mid stone-age) era. There are also some surviving Neolithic (late stone-age) sites such as the chambered tomb at Penywyrhod. Analysis of pollen from ancient soils suggests that much of the area was already cleared of trees by the Bronze Age. The numerous Bronze Age ritual monuments (for example the many different types of cairns, barrows, standing stones and stone circles which exist on the ridges of the uplands) and field systems suggest a settled landscape and sophisticated culture during this time.
- 5.3.2 Hillforts dating to the Iron Age occur throughout the National Park, although it is not known for what purpose they were originally constructed. There are many hillforts along the Usk Valley (including the well-known example of Table Mountain above Crickhowell) and also in strategic sites overlooking river valleys, such as Pen-y-crug north-west of Brecon and Carn Goch above the Towy Valley in the far west of the National Park.



*Standing Stone, Maen Llia*



*Table Mountain hillfort*



*Roman Road and site of Roman camp on Mynydd Myddfai*

### 5.4 Roman Occupation

- 5.4.1 There is a variety of evidence for Roman occupation of the area, with some Roman and Iron Age sites in close proximity, for example Y Gaer Roman fort is close to Pen-y-crug hillfort. Y Gaer Roman fort (west of Brecon) is located on the crossroads of Roman roads, including the route known as Sarn Helen which ran from Coelbren to Brecon Gaer. Several Roman roads are still visible in the landscape, often used as footpaths across the uplands today. The sites of associated forts and camps (often situated on the edges of the highest land) are also visible, and a Roman villa/ bath house was found in the Usk Valley near Brecon.

### 5.5 The Medieval Period

- 5.5.1 Many buildings and landscape features dating from the Medieval period survive in the Brecon Beacons landscape. Some of the most prominent medieval structures were defensive and reflect the political changes associated with the Norman conquest and local power struggles, as well as the ongoing divide between the Welsh and the English. One of the earliest of such structures to survive is the crannog (artificial island) on Llangors lake, which is thought to be the base of King Brychan of Brycheinog and to date from the 9<sup>th</sup> Century. Offa's Dyke was an earthwork built in the 8<sup>th</sup> Century

to demarcate the territory of the English King Offa, effectively separating England and Wales. Today, the nearby Offa's Dyke Path forms part of the eastern National Park boundary. There are Norman castles at Hay-on-Wye and Brecon, and both these towns are thought to be planned settlements from this time, located at strategic river crossing points. Later defensive structures include Tretower castle (in the Usk Valley, with a magnificent adjacent Tudor manor house) and the 13<sup>th</sup> Century Carreg Cennen castle in the far west of the National Park.

- 5.5.2 A number of Medieval religious buildings also survive, including numerous village churches such as Myddfai and Ystradfellte, and St Michael's chapel on Skirrid. Llanelli church (on the western side of the Usk Valley) is surrounded by an ancient churchyard and is located at the meeting point of five roads, suggesting that this was an historically significant site. The most impressive ecclesiastical remains are both monastic: Llanthony Priory in the Vale of Ewyas and Brecon Cathedral, formerly a monastic church.
- 5.5.3 Many of the 'everyday' features which make up the Brecon Beacons landscape are likely to date from the Medieval period, including lanes, farms, fields and villages. This can be illustrated through the legend of the Physicians of Myddfai and the Lady of the Lake, which was recorded in the 14<sup>th</sup> Century, and dates to the 12<sup>th</sup> Century. Several of the farms mentioned in this 12<sup>th</sup> Century legend are still features of the landscape today.
- 5.5.4 The main process which has led to the Brecon Beacons landscape we see today has been centuries of agriculture. Practices such as upland common grazing by hefted flocks, enclosure of lower land into fields, and construction of practical buildings from locally-available materials have been continuing for hundreds of years. Early field creation would have involved the enclosure of upland moorland or the clearance of valley woodlands (assarting), creating characteristically irregular fields, many still surrounded by trees and woodland today. Common grazing encouraged particular species of plants such as heather and grasses, and this, combined with natural variations in geology and soils, created a variety of moorland vegetation. Woodlands were also managed to enable the 'harvesting' of timber using techniques such as pollarding and coppicing. Woodlands were often grazed by animals, creating wood-pasture.



*Reconstruction of Crannog on Llangors Lake*



*Llanelli churchyard*



*Ancient farms, fields and woodlands below the upland common, near Llanddeusant*

## 5.6 Industrialisation

- 5.6.1 From the 17<sup>th</sup> century onwards, relative peace, social changes and the increasing pace of industrialisation saw many changes occur in the landscape. Transport routes were exploited, with a number of turnpike roads constructed in the 18<sup>th</sup> century. Some followed existing routes whilst others were probably new constructions. Many of these roads are still used today, and include the A40, the A470 Brecon-Merthyr, A4059 Brecon-Penderyn, A4067 Brecon-Swansea and A4069 Llangadog-Brynaman. The Monmouthshire and Brecon Canal was opened in 1812, enabling the transport of industrial and other goods by water.
- 5.6.2 A network of railway lines was constructed to connect the area's towns. Building graded track across the high and uneven terrain of the area presented major engineering challenges and often involved tunnels and viaducts. Some railway lines followed the routes of earlier quarry tramroads.
- 5.6.3 As industrial processes improved, and the demand for raw materials increased, industry and mineral extraction became larger in scale and greater in its impacts on the landscape. Limestone quarrying (which had been a small-scale, informal process for centuries) became much larger in scale as the demand for building stone and lime (for fertiliser and industrial use) increased. Lime kilns became a common feature in the landscape (with many surviving today) and quarry-based settlements developed. For example, in the mid 19<sup>th</sup> Century, Penwyllt was home to a community of over 200 people, with houses, chapels and pubs. Now, only a few cottages, the quarry and lime kilns survive.
- 5.6.4 The discovery of coal and iron ore in the area to the south of the National Park led to a rapid increase in industrialisation and associated social and landscape change. Furnaces, iron works, industrial villages and the tramways and railways necessary to transport the products and raw materials were constructed, and woodland was felled for charcoal and building.
- 5.6.5 However, not all eighteenth and nineteenth century landscape change was industrial. The 'picturesque' qualities of the landscape, with its atmospheric, rugged rocks and contrasting green fields were appreciated by the upper classes, who built themselves small country estates surrounded by gardens and parks. Many such estates can still be seen, particularly in the Usk Valley. Writers and influential artists such as JMW Turner visited sites including the Usk Valley and Llanthony Priory and helped to make the area a destination for visitors who wished to appreciate the qualities of its landscape. It was also popular for sport, with uplands used for grouse shooting. This continued the tradition of sporting use in the area: Fforest Fawr had been a Royal (later private) hunting forest since the 11<sup>th</sup> century.



*Former railway line, Talybont valley*



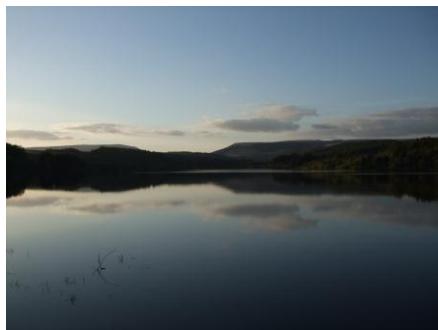
*Abandoned lime kiln, Herbert's quarry*



*Parkland at the Glanusk estate in the Usk valley*

## 5.7 The Twentieth Century

- 5.7.1 The twentieth century saw major changes to the Brecon Beacons landscape. The most visually prominent changes were the construction of numerous reservoirs to supply drinking water for the expanding populations of industrial towns and cities to the south. The construction of reservoirs was in many cases accompanied by the planting of extensive coniferous forests.
- 5.7.2 New infrastructure (particularly linear features such as pylons and roads) has been introduced into the landscape, and occasional telecommunications masts have become prominent features on summits (e.g. Yr Allt and Blorenge). Other features such as industrial tramways have become less visible in the landscape as resource-based extractive industries within the National Park declined. Twentieth century military use has left its mark on the landscape, including tank training obstacles on Mynydd Illtud and WW2 tank traps near Storey Arms.
- 5.7.3 Settlements have expanded in response to demand, often away from their traditional cores. Development outside the National Park (for example the introduction of large-scale open-cast coal mining) particularly to the south has affected views from the National Park. Light pollution from buildings, streetlights, vehicles and other sources within and beyond the National Park has reduced the darkness of the skies and the number of stars visible.
- 5.7.4 The industry beyond the National Park boundary has also had less direct consequences on the landscape. Pollution - including acid rain - damaged upland environments, particularly peat bogs. Loss of peat has affected species composition on the uplands and reduced groundwater storage capacity, leading to changes in water flows in rivers and underground cave systems.
- 5.7.5 Many agricultural changes occurred during the twentieth century (described more fully in the next section). Of these, perhaps the greatest landscape impacts have come from changes in the upland grazing regimes which have affected the appearance and species composition of the upland landscape. For example, a decline in traditional shepherding, combined with the agricultural headage payments of the 1980s and 1990s resulted in overgrazing of the uplands and commons, with a consequent loss of heather, and an increase in grassland species. In more recent years, grazing levels on common land have declined (exacerbated by the impact of foot and mouth disease in 2001), enabling invasive species such as gorse and bracken to establish in some areas.



*Llywn-onn Reservoir, completed in 1926*



*WW2 tank traps near Storey Arms*



*Nature reserve and new planting at Tregyb wood near Llandeilo*

- 5.7.6 One of the greatest changes of the twentieth century in the Brecon Beacons has been the rise of recreation, as demonstrated through designation as a National Park in 1957. Whilst increased visitor numbers have many positive social and economic effects, they have also had negative impacts on the landscape, for example footpath erosion, damage to archaeological monuments, increased traffic, car parks and informal parking, litter and illegal activities such as flytipping and illegal use of 4x4 vehicles and offroad motorbikes.
- 5.7.7 However, the twentieth century and the start of the twenty-first century have also seen many positive initiatives in landscape management. As well as the National Park designation, many sites have been designated for their cultural, biodiversity or geological importance at local, national or international level. Examples include Scheduled Monuments, Conservation Areas, World Heritage Site, Sites of Special Scientific Interest and Special Areas of Conservation, as illustrated on figures 8 and 9. In addition, the western part of the National Park is also designated a Geopark for its geological heritage. The designation of local and national Nature Reserves has made it easier for the public to access and experience sites of rich biodiversity, and access to upland landscapes has been made less restricted by the opening-up of access land under the Countryside and Rights of Way Act (2000).
- 5.7.8 The Brecon Beacons landscape is continually evolving, and the following section (6.0) describes the key forces for change acting on the Brecon Beacons landscape today.

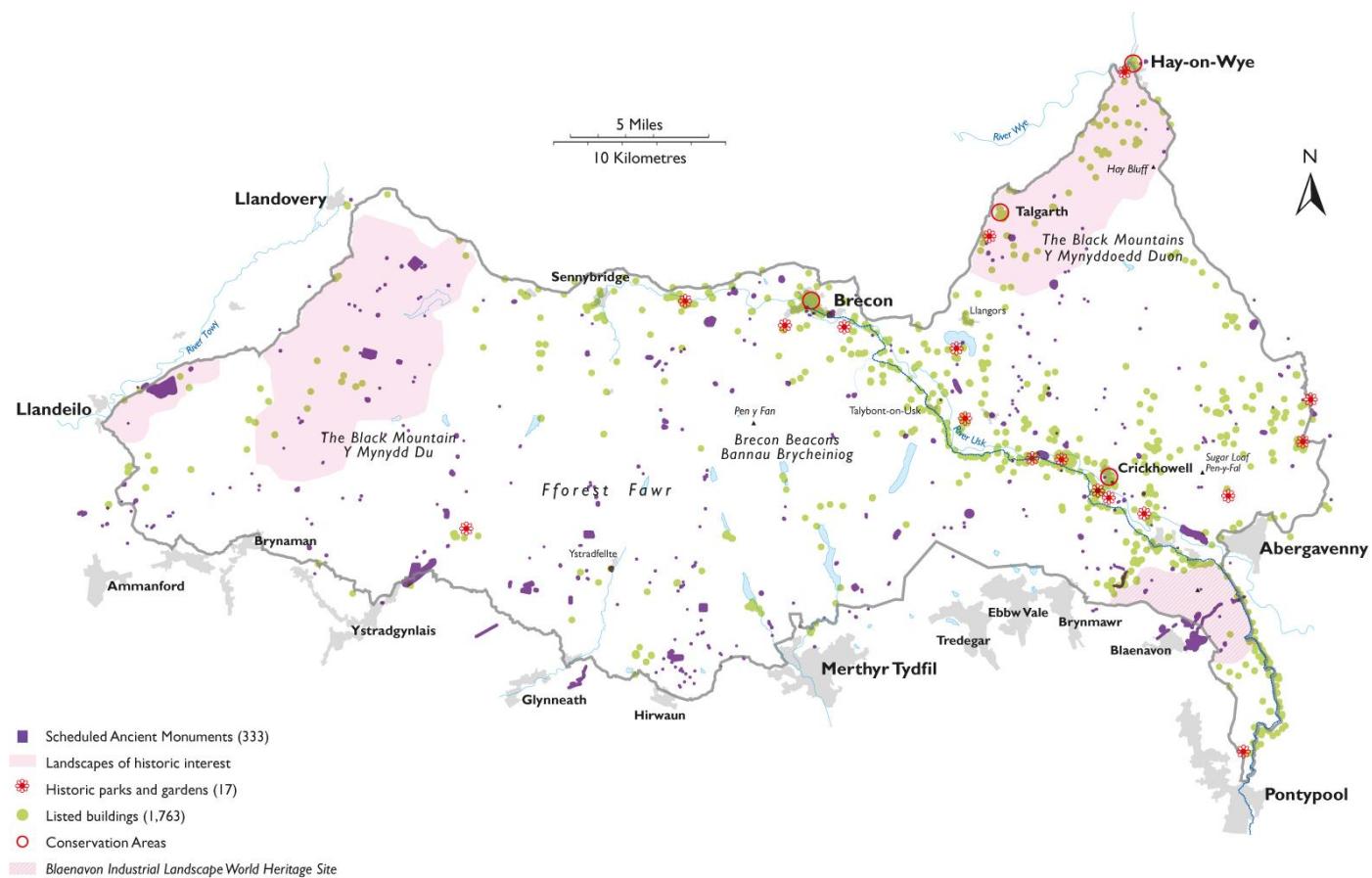


Fig. 8: Historic and built environment designations within the Brecon Beacons National Park

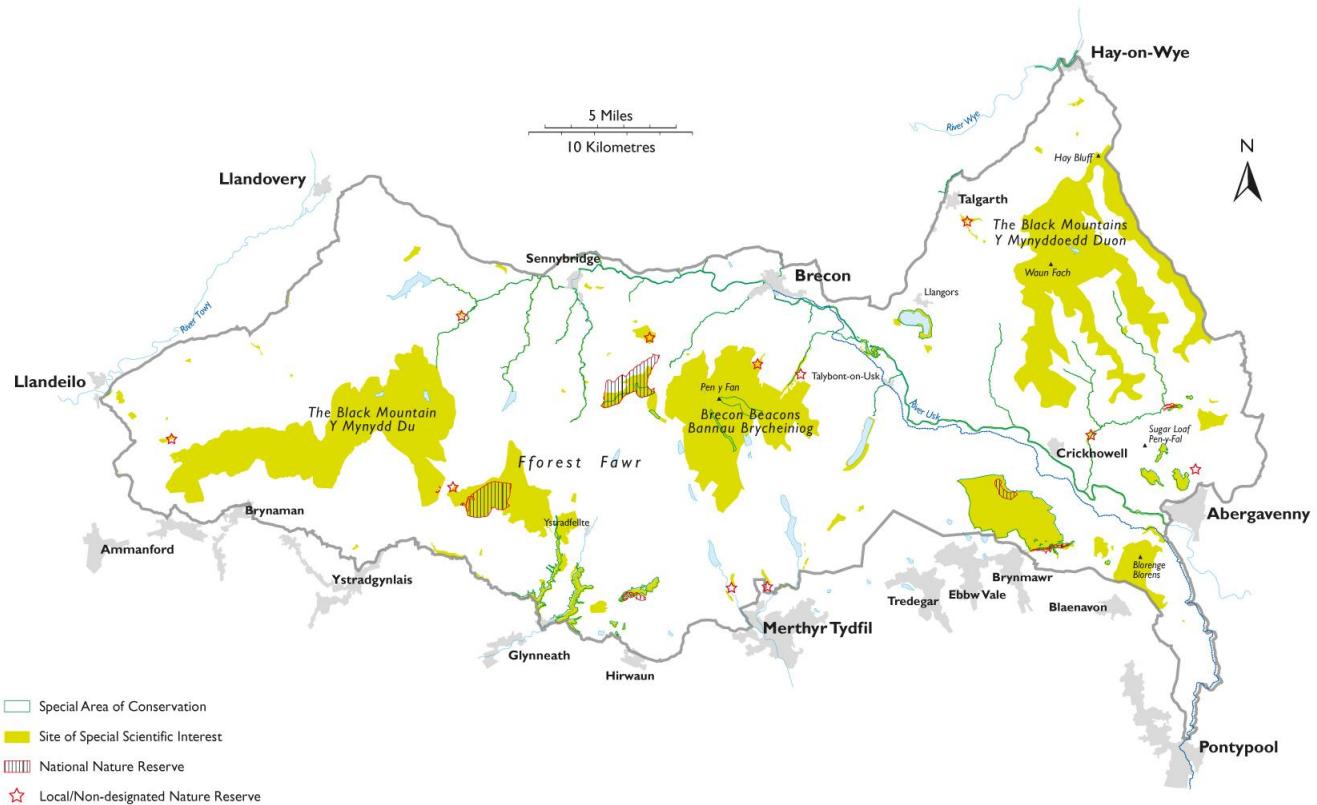


Fig. 9: SSSIs, SACs and Nature Reserves within the Brecon Beacons National Park