

North Pennines



Key Characteristics

- An upland landscape of high moorland ridges divided by broad pastoral dales.
- Remote moorland summits and high plateaux of blanket bog with a severe climate of high rainfall, cold winters and short summers and a unique wilderness quality.
- Broad ridges of heather moorland and acid grassland managed for sheep and grouse.
- Sheltered dales of pastures and hay meadows bounded by dry stone walls and hedgerows with small stone-built villages and scattered farmsteads of a strong vernacular character.
- Alternating limestones, sandstones and shales of the Yoredale series with a stepped profile to hills and dalesides. Millstone Grits cap the higher fells and form distinctive flat topped summits.
- The high summit ridge in the west falling in a dramatic escarpment to the Eden Valley.
- Igneous intrusions of the Great Whin Sill forming dramatic outcrops and waterfalls.
- A heavily scarred landscape of mineral extraction, with many active and abandoned quarries and the relics of widespread lead workings.
- Sparse tree cover with woodlands restricted to river gorges, gills and streamsides and larger coniferous plantations in the moorland fringes.
- Reservoirs scattered throughout the dales and moorland margins.
- A landscape of slow change and cultural continuity.

Landscape Character

The North Pennines is located at the northern end of the Pennine Chain and forms a separate and distinct area of upland moorland and dales. The area has a strong regional

identity and is characterised by some of the highest and wildest moorland summits in England. The dales dissect the extensive upland massif, radiating north and east from the summit ridge.

The moorland landscape is expansive and rolling. Large expanses of blanket bog are found on the higher summit ridges and plateaux in the west. Rocky outcrops form scars and screes, which interrupt the smooth curves of the moorland. The variations in texture and colour of the vegetation, eg heather, cotton grass and bilberry, throughout the year is particularly characteristic of these landscapes. Wide, panoramic and uninterrupted views of and from the moorland reinforce its apparent 'naturalness' and feelings of remoteness.



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Ireshopeburn, showing almost all the typical characteristics of the North Pennines landscape.



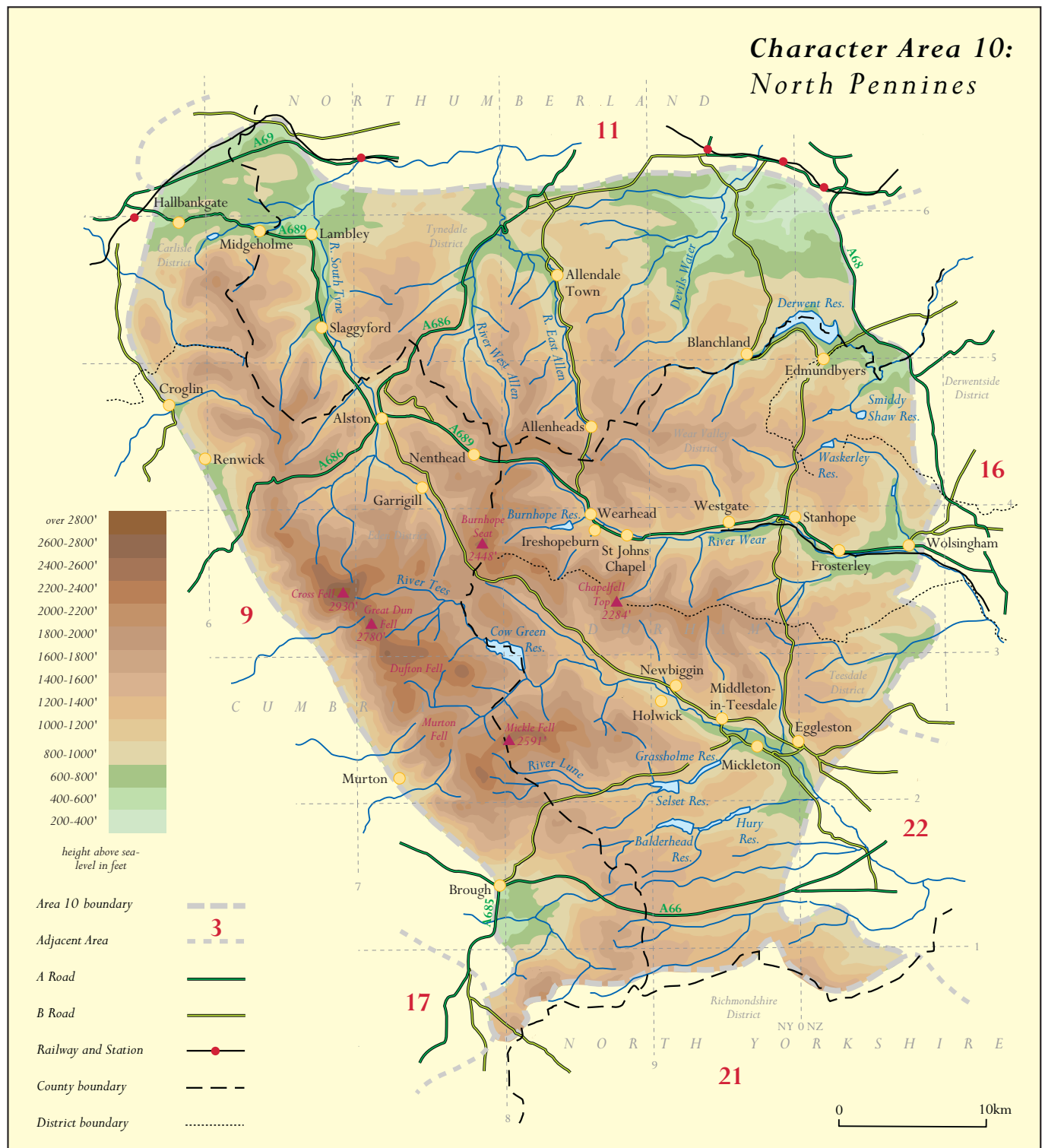
The vast plateaux of the North Pennines are heavily incised by steep sided dales, creating a series of moorland ridges which extend eastwards and northwards from the highest point, in the west. These ridges rise up to 700 metres in the west and 450-500 metres in the east. The visual extent of unbroken moorland tends to be limited towards the east as long views over the upland areas often take in vistas of the dales below. As a result, the sense of remoteness is rather less powerful than in the west of the area.

The western half of the area is characterised by more massive moorland summits which rise above the Eden valley as a result of the tilted structure of the Alston Block. Broad

ridges, capped by harder sandstones, form the central core of the North Pennines and the well known peaks of Mickle Fell, Knock Fell, Great Dun Fell and Cross Fell, which vary between 750 and 893 metres in height. These summits experience a severe climate with high levels of rain and snow, low temperatures and harsh winds in both the winter and summer. In clear conditions, views over the Eden Valley to the Cumbria High Fells and across the Dales to the east are dramatic.

A dramatic escarpment forms the western boundary of the North Pennines. Viewed from below, it forms an imposing unbroken wall above the Eden Valley and from the top it

Character Area 10: North Pennines



offers awe-inspiring views across the vale to the Cumbria High Fells beyond. Bands of rock break through forming horizontal scars of limestone and dolemite. The scarp face appears unbroken but is gullied by short steep becks and gills. Below Dufton Fell the scarp landscape becomes more complex and broken with dramatic features such as High Cup. The upper slopes are treeless and unenclosed but land on the lower slopes is subdivided by wire fences and thin hedgerows. Small blocks of semi-natural, mixed and conifer woodland form shelter belts and are distinctive elements in the landscape to the east of Melmerby.

The difficulties of hillfarming have led some farmers to leave the land and created pressure for those remaining to intensify. Many of the characteristic features of the landscape which rely on traditional patterns of farming are decaying.



JOE CORNISH

The enclosed landscape of the dales contrasts strongly with the open landscape of the moorlands. The softer textures of the in-bye and out-bye pastures and the obvious human influence in the patterns of stone walls and buildings provides a marked contrast to the moorland.

Small villages, hamlets and clusters of farms built of millstone grit with roofs of stone flag are strung out along the dale floor and isolated farms are scattered along the moorland margins. The lower reaches of the main dales are relatively broad with arable fields and pastures defined by hedgerows and dry stone walls. Hedgerow trees are abundant and the lower dales landscape is well wooded with semi-natural woodlands in ravines and gorges and scattered farm woodlands and coniferous plantations. The middle and upper reaches are more pastoral in character with semi-improved and unimproved pastures and hay meadows bounded by dry stone walls on narrow floodplains and steep valley sides. Trees and woodlands are sparse and largely restricted to river banks and minor valleys or gills. The heads of the dales lie high in the western summit ridges. Here narrow valley floors of marginal pastures and rough grazing bounded by stone walls and wire fences are encircled by moorland ridges, often strongly gullied by minor becks, burns or sikes. Gritstone farm buildings and field boundaries give unity to the landscape and this, together with the maintenance of traditional agricultural practices, creates a strong sense of historical continuity.

Physical Influences

The North Pennines coincide with the area known to geologists as the Alston Block. This is a structural unit consisting of a succession of Carboniferous sedimentary rocks which dip gently eastwards towards the Durham Coalfield and North Sea. The area is bounded on the north by the Stublick Fault System along the Tyne Gap, on the west by the Pennine Fault System along the Pennine escarpment, and on the south by the Lunedale Fault System. On its eastern margin the area adjoins the Durham Coalfield.



JOE CORNISH

Although walls are a characteristic feature of Allendale, the patterns are not as marked as in Teesdale and Weardale. Valley-side woodlands and shelter belts tend to be more prominent, giving the impression of a softer landscape.

The older, mainly Ordovician age, mudstones and volcanic rocks which underlie the Carboniferous rocks crop out along the foot of the Pennine escarpment and in a very small inlier in Upper Teesdale.

The Carboniferous rocks mainly comprise a succession of limestones, sandstones and shales with a few very thin coals. The term 'Yoredale Facies' is applied to the regular repetition of these rock types: the name derives from an old name for Wensleydale in the adjacent Yorkshire Dales. Differential erosion, of the alternations of relatively resistant limestones and sandstones with the weaker shales, has produced distinctive terraced features on many hillsides. In addition, many hilltops coincide with the outcrop of sandstone beds giving them characteristic flat tops. Long, relatively low sandstone and limestone scars are prominent features in many places. Unlike many parts of the Pennines further south, limestones do not generally form extensive outcrops in the North Pennines. Areas of limestone grassland and limestone pavements are therefore of restricted occurrence in the North Pennines.

sombre, dark, columnar-jointed crags. Holwick Scars, Cronkley Fell and High Cup Nick are particularly fine examples. Where crossed by the river Tees the Whin Sill gives rise to the well-known and spectacular waterfalls of Cauldron Snout and High Force. Intrusion of the hot Whin Sill altered the adjacent rocks. Locally in Upper Teesdale, wide areas of limestone were baked to form a coarse-grained marble, known today from its highly distinctive weathering as 'sugar limestone'. This rock, an important element in the landscape of Teesdale, supports an internationally important relic alpine flora.

The rocks of the North Pennines host numerous mineral veins which carry ores of lead, zinc and, in a few places, a little copper. These have long been worked from many mines. Associated with the metal ores are such minerals as fluorite, baryte and witherite. Originally discarded by the lead miners as waste, these minerals became important commercial products in the late 19th century. Today they are the main focus of mining: fluorite is still worked from one mine, baryte from two mines. The mining industry has



A classic example of whitewashed Teesdale farmbuildings at Newbiggin.

MIKE KIPLING

Intruded into the Carboniferous rocks is a large horizontal body of igneous rock known as the Whin Sill. It is worth noting that the Whin Sill is the original sill of geological science from which all other sills derive their name. ('Sill' is an old north of England quarryman's term for any horizontal body of rock: 'whin' simply refers to its hard character and black colour). The dolerite of the Whin Sill is extremely resistant to erosion and its outcrops along the Pennine escarpment and in Teesdale are marked by striking

left an indelible mark on the landscape in the form of old spoil heaps, shafts, adits, and opencast workings. Highly characteristic of this area are the numerous 'hushes', long opencast trenches on hillsides which were, at least in part, excavated using the erosive force of torrents of water periodically released from specially constructed dams high on the hillsides.

Large-scale quarrying has also left its mark. The Whin Sill outcrop in Teesdale, and the Great Limestone outcrop in

Weardale are scarred with numerous old quarries. Whin Sill is still worked in Teesdale and limestone for cement-making is today worked in Weardale from a very large quarry.

Glacial deposits mantle some of the valley slopes and hilltops where they obscure the featuring of the Yoredale rocks. Peat blanket bog covers extensive areas of the higher ground on the internationally important Moorhouse National Nature Reserve.

Historical and Cultural Influences

Nomadic Mesolithic hunters are thought to have had camps in the North Pennines, when woodland cover would have been extensive. They may have started the woodland clearance which was intensified by Neolithic farmer-hunters. The development of peat bogs was caused by the combined influence of these early settlers and climatic deterioration. Prehistoric burial mounds have been found in the South Tyne Valley and Bronze-Age field systems in Stainmore, Teesdale and Weardale on what is now open moorland.

In the Roman period, the area was an important part of the military frontier zone and several roads crossed the uplands. The landscape was still well-wooded at the time and it is thought that agricultural transhumance was widely practised within a system of cattle rearing and cereal cultivation. This pattern of land use continued in the medieval period and may also have been linked, in later times, with seasonal mining of, for example, coal.

Evidence of early lead mining by the Romans has been discovered at Brough but more significant workings were centred on Alston Moor in the twelfth century. The area yielded plentiful supplies of metalliferous ore and at this time the Royal Mint, based in Carlisle, was supplied with silver from the 'Silver mines of Carlisle' located on Alston Moor.

The mining of precious metals was an important activity in the Alston and Upper Weardale area in the period from the 14th to the 19th centuries and had a significant effect on the landscape. Prior to the expansion of the industry, most of the settlements were concentrated in the sheltered valleys. With the discovery of metal ore (at Alston, between Killhope and Nenthead, in West Allendale, around Carr Shield, in the valley of the Rookhope Burn and near Ramshaw), mining communities developed and in 1861, the population in the ore fields area reached its peak at 27,000 people. Associated industries concerned with smelting and dressing also expanded and roads, railways, tramways and water supply lines were constructed to serve the increased population. The villages of Allenheads and Nenthead were purpose-built to provide accommodation for the industrial workers.

The decline in the industry, which began in the late 19th

century, resulted in significant depopulation of the area. The landscape retains much evidence of former mining activity in the form of mine buildings, shafts, levels, wheel pits, washing floors, bouse teams, smelter flues and chimneys and in the dramatic v-shaped nicks in the skyline caused by hushing. Mineral extraction continues today in the North Pennines. There are some major quarrying operations, and many middle range operations with high environmental impacts.



PHILIP NIXON

The lead mining industry has left indelible marks on the landscape in the form of hushes. These examples are at Monks Moor.

Hill farming and management of game are largely responsible for maintaining the present day character of the landscape. Most farming income is earned from large sheep flocks which are grazed on common land, moorland grazing, allotment land and in-bye pastures at lower altitudes. Many upland farms have a proportion of enclosed land and raise cattle as well as sheep. Changes in the agricultural landscape have occurred as a result of drainage, heather cultivation and reseeding, increased fertiliser applications and increased stock numbers.

Perceptions of the North Pennines landscape expressed in descriptive writings, literature or works of art are not common and the area has been described as falling within an 'aesthetic shadow'. This is a product of the area's remoteness and the industrialisation of parts of the dales during the heyday of travel writing and landscape painting.

Teesdale has always been by far the most well-known landscape in the area. It was painted by Thomas Smith of Derby in 1751, George Lambert in 1761 and J M W Turner in 1797 and 1816. Sir Walter Scott named his poem Rokeby after Rokeby Hall in Teesdale and can be credited with contributing to the scenic reputation of Teesdale. Charles Dickens found inspiration in the area for Nicholas Nickleby, written in 1839. John Martin, a regionally important painter of 'gothic' or 'sublime' landscapes was very much inspired by the North Pennines and Allendale in particular.

Buildings and Settlement

The pattern of settlement is one of small scattered villages, hamlets or clusters of farmsteads constructed of Carboniferous sandstone and gritstone in the sheltered valleys and isolated farms on the higher, more exposed ground.

Early Anglian, Danish and Norse buildings were mainly constructed of timber and therefore few have survived, but the utilisation of local stone was more common after the fifteenth century. Pele towers, castles and large farmhouses are located within the valleys in sheltered locations. Isolated farmsteads, scattered on the higher land, relate to the population expansion triggered by lead mining. High concentrations of bastles - fortified farmsteads - are located in Allendale and the South Tyne Valley. A high proportion of the buildings in the area are characterised by simple architectural detailing and the use of local sandstone. Roofs are traditionally of stone slate although Welsh or Cumbrian slate is common on later buildings. Many villages contain more modern private or public housing, often constructed of brick.

Alston, reputed to be the highest market town in England, is the largest upland settlement in the North Pennines. The small market square and cobbled streets with sandstone and white rendered buildings provide a focus for the upper South Tyne valley. The village of Blanchland is a particularly picturesque estate village built in the 19th century on and around the remains of an old monastery. The villages of Allenheads, Garrigill and Nenthead were planned mining settlements that grew in size in response to the development of the industry and consist of solid terraces of domestic dwellings.

The settlement characteristics of the dales are strongly influenced by land tenure. A large proportion of the area is managed as estates. The whitewashed buildings of the Raby estate in Teesdale are particularly distinctive.

Land Cover

The higher moorland summits and plateau in the west are dominated by blanket bog of heather, bilberry, cotton grass and purple moor grass and the drier ridges of the east are covered with heather and grass moorland, much of which is managed through burning to create a characteristic mosaic of relatively young heather. Where grazing pressure is high the heather is replaced by 'white moor' of acidic grassland and in places by bracken.

One of the most important habitats is limestone grassland, which contains a very high number of different types of plants including an unusual number of rare species. The sugar limestone grasslands of Upper Teesdale are particularly important because they include arctic-alpine or

alpine flora and a great number of very unusual species. It is said that no other limestone grassland in Britain is so rich in rare plant species. The value of this area is further increased by the presence of juniper scrub, which is scarce and on the decline in Britain.

The hay meadows, especially those of the upper dales, are rich in plant species and include a large number of rare and local species. It is thought that these hay meadows may be the remains of the flora of woodlands that grew on the same sites many centuries ago, because they include some plants typical of woodland, such as globe flowers and wood anemones. Traditional management over the centuries, without drainage, addition of fertiliser other than lime or manure, or other forms of improvement, has created and maintained the rich grasslands.

Semi-natural woodlands are found typically in minor valleys or gills and along watercourses, ash and alder-ash woodlands on limestones and oak-birch woodlands on acidic soils. Many are grazed through by livestock and are in decline.

Farms are small and often form part of traditional agricultural estates, eg Raby and Allendale. Most farms have a small area of inbye ground for sheltered grazing and winter forage, with extensive grazing rights on adjoining moorland. The main enterprises are the production of store cattle and store lambs from hardy suckler cows and hill ewes, though there are a few small dairy farms. Government funding via LFA and ESA payments have helped support incomes and protect the patchwork of small well-kept farms and small fields.

The Changing Countryside

- The reduction in hay making, the improvement of meadows and pastures by fertilising, draining and reseeded and an increase in the use of silage has resulted in a loss of species diversity and pattern and texture in the lowland landscape.
- The introduction of some larger modern farm buildings, neglect of stone walls, replacement of walls with wire fences and erection of new fences in open landscapes have all weakened the character of the landscape.
- Lack of hedgerow and broadleaved woodland management in the lower dales.
- Increasing numbers of livestock, combined with extensification of grazing regimes, leading to conversion of heather moorland to grass moor and rough upland grazing, both by overgrazing and by lack of moorland management. 'Ranching' of stock results in loss of internal stone walls; and new fences on moor tops to separate flocks.

- Overgrazing leading to loss of important upland habitats.
- Many of the small semi-natural woodlands of the dales are poorly managed and in decline, being often heavily grazed by overwintering livestock which results in a reduction in their biological diversity and their ability to regenerate.
- The use of modern building materials in the repair and renovation of buildings often leads to an erosion of the vernacular character of villages and farmsteads.
- Many of the lead mining remains which are important to the industrial heritage of the North Pennines are in decline and a number have been damaged or destroyed in recent years.
- Large-scale quarrying for roadstone and cement manufacture continues to have a high impact on the landscape in some areas and pressure for extensions to existing workings is likely to continue.
- The high windspeeds of the remote upland ridges are leading to pressures for the development of substantial wind farms in prominent locations.
- MOD use of Warcop ranges, trunk road development and quarrying.
- Reduction in extent and quality of juniper woodlands.
- Drainage of moorland by gripping.
- Planting of inappropriately located conifer woodlands.

Shaping the Future

- There are opportunities to conserve and enhance blanket bog, heather moorland and unenclosed limestone grassland by, for example, reducing grazing levels, discouraging moorland drainage and blocking grips.
- Improved management of farmland in the dales would include the reintroduction of traditional hay meadow management, active management of existing small woodlands, hedgerow trees and hedgerows, creation of new woodlands by planting or encouraging natural regeneration and restoration of wetlands, particularly in rough pastures and allotments.
- The conservation of field boundaries, particularly stone walls and older hedgerows, is important.
- The use of sympathetic materials in the refurbishment of old buildings should be addressed.
- There is scope for the further conservation and interpretation of sites of historic and industrial archaeological importance.

- The conservation and enhancement of watercourses and riparian landscapes should be considered.
- The expansion of broadleaved woodlands might be appropriate in upland gills especially as extensions to vestigial woodlands.
- The consolidation and extension of juniper woodlands is important.
- The restructuring of unsympathetic or poorly designed conifer woodlands should be addressed.

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Glossary

adit: horizontal passage, for draining or entrance, leading into a mine

beck: brook, rivulet

ESA: Environmentally Sensitive Area

gripping: creating ditches or channels for carrying off water

grips: ditches or channels for carrying off water

in-bye: enclosed land below the open fell, often surrounding farm buildings

inlier: area of rock surrounded by rocks younger in age

LFA: Less Favoured Area

out-bye: a short distance away

sike: small stream or rill, gully, hollow or stretch of meadow