

2 THE YORKSHIRE DALES NATIONAL PARK

Key Characteristics

- Large-scale upland landscape of high exposed moorland dissected by dales that are often deep.
- Striking contrasts between wild, remote moors and sheltered dales, each with its own character.
- Marginal agriculture arising from relatively high altitude and poor climate, creating a landscape of little or slow change.
- Visible evidence of historic land use arising from conservation of features from all periods.
- Millstone Grit plateaux of high moorland in the east contrasting with the Yoredale Series of alternating limestone, sandstone and shales in the north and west. The latter form typically stepped profiles to dale sides.
- Great Scar Limestone in the south and west, giving rise to classic glacio-karst landscape with cave systems, outcrops, scars, grills, gorges and pavements.
- Variation is provided by the distinctive steep sided smooth and rounded hills of the Howgill Fells, a wild and remote area, which has formed from an outcrop of sequences of sandstones, siltstones and mudstones of Silurian age.
- Pattern of bleak sweeping moorlands of heather or extensive blanket bog on plateaux, with rough grazing on upper slopes, permanent pastures on dale sides and fields cut for hay or silage on more fertile land in the bottom of the dales.
- Very strong patterns and drystone walls, with very large rectilinear enclosures on most fell tops, much smaller enclosures in dales, and often older, irregular patterns around settlements.
- Numerous small stone field barns in all the dales but most notable in Swaledale, Wensleydale and upper Wharfedale.
- Vernacular character of gritstone and limestone buildings including also scattered farmsteads, particularly in the north and west, and small nuclear villages on valley floors, related to river crossing points and transport routes.
- Very limited tree cover, confined to villages, sycamore clumps around farmsteads, streamsides and steep slopes.
- Sparse, ancient broadleaved woodlands on steep gill and dale sides.
- Widespread remains of historic mineral working especially lead mining.

Landscape Character

- 2.1 The Yorkshire Dales form part of the chain of Pennine uplands running up the centre of Northern England. The Dales are separated from the North Pennines by the Stainmore Trough faults and from the more industrialised southern Pennines by

the South Craven faults. They differ from those adjacent Pennine uplands as a result of the relatively greater influence of limestone than gritstone in the Yorkshire Dales. From altitudes of over 600 metres, the land drops down towards the fertile Vales of York and Mowbray to the east, and to the low lying plains of Lancashire to the south west, dividing the Dales from the Bowland Fells. To the north west lie the older rock formations of the Lake District and surrounds.

- 2.2 The unique character of the area stems from the characteristic pattern of underlying geology and a distinctive pattern of pastoral farming, which has shaped the landscape for centuries. The relatively high altitude, short growing season and high rainfall has meant that the area has always had limited possibilities for agriculture, which is restricted to the rearing of livestock. A self-contained farming system, of small holdings based upon a flock of sheep and a few cattle, providing its own winter feed needs and using all grades of pasture, rough grazing and moorland to the fullest extent, has created the landscape and is an integral part of its character.
- 2.3 The close relationships between rock types, landform, climate and the resulting history of man's activities can be clearly seen in this landscape. Change has been slow and relatively limited in its effects and, as a result, evidence of man's activities has survived, from the earliest periods onwards, creating an overwhelming sense of continuity with the past.
- 2.4 The landscape is characterised by contrasts, especially between the dales below and the moors above. In the dales the environment is more sheltered and there are intricate patterns of walled fields, containing meadow grasses and wild flowers. Small villages and farmstead, built of local stone, are tucked into sheltered corners often with clumps of trees protecting them from the worst of the elements. On the dale sides the network of walls continues with scattered stone field barns often appearing as distinctive features. The steepest slopes are frequently marked by the presence of sparse woodlands or sometimes open rock scree. Fast-flowing streams tumble down the slopes forming dramatic waterfalls where the harder rock is rougher and coarser. On the fell tops the grassland gives way to sweeps of heather moorland and cotton grass bog. Everywhere there are dramatic views of characteristic combinations of hillside, valley walls and barns, punctuated by outcrops of rock, streams and trees, and enlivened by the colours and textures of wildflowers. This is the essence of the Dales landscape.
- 2.5 The area has a physical and cultural unity, and yet displays significant variation within its landscape. The glaciated karst landscape of the Great Scar Limestone dominates the landscape in the south and west notably around the Ingleborough area. The Craven faults are responsible for dramatic parallel scars in the south, giving rise to well known features such as Giggleswick Scar and Malham Cove. The rocks of the Yoredale series overlie the Carboniferous Limestone and form the moorland hills and plateaux, which are divided by the intervening limestone dales.
- 2.6 The moors are high and wild, with extensive areas of rough grazing and very large, often hardly visible, walled enclosures. These high summits dominate the skyline above the dales, providing extensive views out over the enclosed land below and dividing one dale from another. There are extensive areas of heather moorland, especially in the north (Swaledale) and in the south (Barden Moor). Here the Millstone Grit outcrops, notably at Simons Seat. The gritstone also influences the character of stone walls, barns and other buildings, distinguishing them from some of the westerly moorland areas.
- 2.7 In the north west of the National Park, the Howgill Fells comprise an unusual and dramatic group of steep sided, rounded hills, sharply incised by a number narrow rocky of gills to which small woodlands cling. Reaching heights of over 600m, by their remarkable form they stand out noticeably from the surrounding land. A large

part of the Fells consist of relatively high and exposed open moorland that provides uninterrupted views. In places the gently sloping ridge tops are covered by poorly drained moorland with blanket bogs underlain by deep peat. Some of the steeper slopes are covered with loose scree and small streams cascade down the gills, occasionally forming dramatic waterfalls, notably Cautley Spout. On the better-drained side slopes rough grassland, bracken and small patches of heather are heavily grazed by sheep and cattle. The fells are unenclosed, but drystone walls separate the open common land from the rough pastures on the lower slopes. Isolated farmsteads occur on the lower slopes or in the valley bottoms, sheltered by clumps of trees.

- 2.8 Each of the dales has its own distinctive character. In the north, Swaledale is perhaps the typical Yoredale valley, with its sweeps of heather moorland on the fell tops, its pattern of walls and field barns, flower-rich meadows and small tight knit villages. Wensleydale is wider, with a more varied landform which creates some very enclosed areas, Bishopdale is broad, with lines of trees and small plantations cutting across the dale, while Widdale has a rather bleak and forbidding character with rough grazing predominating and a number of rather incongruous conifer plantations. Wharfedale and Littondale demonstrate the typical Dales character of strong patterns of walls and field barns on the valley floors, with woodlands, surviving on valley sides, and compact villages of stone tucked into the hillsides next to winding rivers. Coverdale is quiet, dominated by rough grazing, with many small streams cutting down the hillsides while Dentdale, in the north west, shows the influence of wetter, milder conditions, with small fields bounded by hedges, rather than drystone walls, contributing to a sheltered, softer, more domestic landscape.
- 2.9 Dales in the south and west reflect the influence of the underlying limestone. They are wide and open, with rugged outcrops of light coloured rock and pale green pastures, creating a distinctive combination of light and colour. Ribblesdale is affected by large quarries on the dale sides, while Chapel-le-Dale reveals the underlying rock dramatically, with broad shelves of limestone on both sides. The hillsides, walls, and isolated buildings all have a unity of colour that creates a sense of openness and light.

Physical Influences

- 2.10 The predominant rock of the Dales is the Carboniferous Limestone, formed about 300 million years ago. This is overlain by the Yoredale series of sedimentary rocks that are in turn overlain by Millstone Grit, which forms a capping to some of the highest hills. The region broadly coincides with the Askrigg Block in which Carboniferous strata are generally flat lying and not faulted or folded.
- 2.11 The Carboniferous Limestone comprises thick, strong, hard and compact beds of limestone interbedded with mudstone. The limestone is predominantly grey in colour, although it can vary from cream to dark grey and the familiar white colour of the exposed rock is due to the formation of a surface patina resulting from weathering. The prominent bedding planes of the rock can be seen in the locally extensive, but nationally rare limestone pavements along valley sides and in notable outcrops and crags.
- 2.12 The Yoredale series of rocks consist of repeating layers of alternating weak shales and hard sandstones and limestones, with thin coal seams. These give rise to the stepped topography, which is such a distinctive feature of dales such as Wensleydale, and creates the dramatic profiles of Ingleborough and Pen-y-ghent. The bands of hard rock overlying softer rocks also give rise to numerous waterfalls often with large pools curved out in the softer rocks at their base. Further north, the sandstones are more prominent and are locally a source of flagstones.

- 2.13 The thick beds of hard sandstone in the Millstone Grit have resisted the forces of glaciation and form plateaux of high, exposed moorland, covered with heath and upland bog, including Grassington Moor, Barden Moor and Barden Fell in the south east and Great Shunner Fell in the north west.
- 2.14 An outcrop of sequences of sandstones, siltstones and mudstones of Silurian age has contributed to the unique form of the Howgill Fells in the north west of the National Park. Although the geological structure is relatively complex, the rocks all possess a similar resistance to erosion, which gives rise to the smooth, rounded shape, which is so characteristic of these fells. Ice scouring during the last glaciation has only acted to emphasise the evenness of the slopes.
- 2.15 With the predominance of limestone, there are few naturally occurring water bodies. However, where the overlying Carboniferous rocks have been eroded away, inliers of the older rocks below occur often in the valley bottoms. These are in the Silurian and Ordovician mudstones, siltstones and greywacke. They form the impermeable beds that underlie Malham Tarn and can be seen in part of Ribblesdale and Crummackdale.
- 2.16 All the different rocks have been eroded and smoothed by glacial activity. Wharfedale and Littondale show the classic u-shape of glacial valleys. Deposits of moraine resulted in the creation of Semer Water while elsewhere boulder clay has been deposited and shaped into drumlins by the action of glaciers. The extensive drumlin field around Ribblesdale, for example, is a remarkable hummocky landscape.
- 2.17 Glacial activity over the underlying limestone has created the distinctive features of the classic glacio-karst landscape, with outcrops, scars, gorges (some with tufa deposits, as at Gordale Scar) and erratics. Underneath, revealed only by sinkholes and potholes, are some of the most extensive cave systems in Europe.
- 2.18 Ore deposits, principally of lead and barite, occur in fissure veins associated with faults in Carboniferous rocks. Mineralisation occurs mainly between Settle and Grassington Moor, and along Wharfedale to Wensleydale and Upper Swaledale.

Historical and Cultural Influences

- 2.19 Change in this landscape has been slow and of limited impact and as a result evidence remains of human activities from the earliest inhabitation onwards. Recent work has revealed the area to be extremely rich in archaeological remains, many of which are clearly visible within the landscape. Among the most obvious are the parallel strip lynchets on some dale sides, which are of Anglo Saxon or Roman origin.
- 2.20 The names of the villages and farmsteads give an indication of their origins. In the north and west Norse tribes, who invaded the area in the 9th and 10th centuries, set up large farmsteads with winter and summer pastures often indicated by the names –sett, -thwaite and -scale. Examples include Appersett and Southerscales. Anglo-Danish names ending in –by, -thorpe, -ley, -ton, -ing, such as Grassington, tend to predominate in the south and east of the area. These settlements were commonly small villages adjacent to the open fields that all villages shared. Livestock were moved to higher ground during the summer, while the strip fields were cultivated. Evidence of this pattern can still be seen around Kettlewell and Starbotton in Wharfedale in the long, narrow, walled enclosures from the original strips.
- 2.21 The most obvious historic feature of the Dales is the network of walled fields that spreads across all valleys and hillsides. The fields close to the settlements are small, often irregular, and date back to the 17th century or earlier when the open

field system gave way to a system in which each villager farmed a smallholding. These smallholdings consisted of a few fields in the valley bottom and on the side slopes, with a barn for the over-wintering of a small herd of cattle, resulting in the numerous scattered field barns. Walled tracks were created, leading up from the valley bottom to the fell tops, giving access to the open moorland for summer grazing. Larger enclosures resulted from the period of Parliamentary Enclosure, from the 18th century onwards, whilst the largest enclosures, defined by long, straight walls striding across the rugged hilltops, arose from later enclosure still, in the 19th century. These effectively enclosed the majority of land leaving only small fell tops as open grazing land, particularly in the north.

- 2.22 Activities other than farming have also influenced the landscape. Lead mining has long been an integral part of the primarily agricultural way of life in the Dales with records of mining in Roman times at Greenhow. In the 18th and 19th centuries, when the population was probably at its highest, many farmers combined working in the local mine with running a smallholding. The mining was always small scale, but evidence of it can still be seen, from the ruins of smelting mills and chimneys to bell pits and spoil heaps, notably in Swaledale and Arkengarthdale and above Grassington in Wharfedale. Small limekilns built into the hillside are also common. Thin coals in the Millstone Grit were worked locally on a small-scale, for example at Fountains Fell. Today, the primary mineral extraction is the quarrying of limestone and gritstone.
- 2.23 Transport also played its part and today the remaining network of stone wall lined roads and tracks are a legacy of the old routes of sheep droves, coal lanes and packhorse tracks. The Settle-Carlisle railway, opened in 1876, runs up Ribblesdale and continues northwards through the landscape, often in steep cuttings but also passing over huge viaducts, the most spectacular being the 24 arch viaduct at Ribbleshead.
- 2.24 Because of its unique landscape qualities, the area has long attracted artists and writers, the most famous being JM Turner, who toured and sketched here in 1816. There is also a striking painting of Gordale Scar, painted by James Ward in 1817. Adam Sedgewick (1785-1873), the geologist, was based in Dentedale and Reginald Farrer (1880-1920) a botanist who brought many exotic plants to England, was born and brought up at Ingleborough Hall, Clapham. The poet Thomas Gray visited Gordale Scar in 1769 and the first tourist guide for the area (Aysgarth Falls) was written by Bishop Pocock as early as 1751.

Buildings and Settlement

- 2.25 As a result of its marginal agriculture, the area has always been sparsely populated. During the 12th and 13th centuries, the large northern monasteries, in particular Fountains and Jervaulx Abbeys, extended their influence and established outposts in the Dales from which to manage their extensive sheep runs. But it was not until their dissolution in the 16th century and the establishment of freeholders who began to prosper, that substantial farmsteads were built. It is the vernacular domestic stone buildings of the farmsteads and small villages from this period that give the area much of its character. Always built in local stone, Millstone Grit sandstone or Carboniferous limestone, with sandstone flags for roofing; the farms, barns and villages appear to have grown organically out of their landscape. Churches tend to be unobtrusive with chapels a feature of many villages.
- 2.26 By contrast with the dales and certain limited areas of moorland that have been worked for minerals, the moorland areas are largely devoid of settlement.

Land Cover

- 2.27 The traditional system of farming, which relies upon grazing spread between the fertile valley and the upland rough grazing, has created the distinctive pattern of land cover. Flocks of sheep were grazed on the hill tops in the summer and brought down to the sheltered valley bottom in winter and for lambing in the spring. A few cattle were over-wintered in the field barns and fed with hay. Their manure is used to fertilise the hay meadows. Stock was moved out of the valley grassland onto the hills in late spring to allow crops of hay to be produced from the grassland. This system has resulted in the exceptionally beautiful, flower rich meadows in the dales combined with the rough grazing and moorland at higher altitudes.
- 2.28 Pressure of grazing including the practice of allowing livestock to find shelter under trees where they graze out any regenerating trees or shrubs has prevented the development of any substantial green cover. The woods that remain are remnants of the formerly more extensive ancient, broadleaved woodland now confined to steep valley sides. In such difficult conditions, tree growth is slow and the canopy tends to be very open, allowing the development of a rich ground flora.
- 2.29 Extensive areas of moorland, particularly to the east of Wharfedale and in the north (Swaledale), are managed for grouse shooting and are some of the prime grouse moors of England. Here the heather is carefully managed by controlled burning, creating a heather mosaic of different heights and ages. In the west where the rainfall is higher, the moors are covered by blanket bog, with the typical vegetation of heather and cotton grass.
- 2.30 On the limestone, pastures of close-cropped grass on thin soil support a range of flowers, including mountain pansy. Where underground water seeps out, flushes occur which give rise to a rich wetland flora.