

Notification date: 8 July 1993

COUNTY: DERBYSHIRE, SOUTH YORKSHIRE, WEST YORKSHIRE,
GREATER MANCHESTER

SITE NAME: DARK PEAK

DISTRICT: HIGH PEAK, SHEFFIELD,
BARNSELY, KIRKLEES,
OLDHAM, TAMESIDE

SITE REF: 15 WKZ

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981, as amended.

Local Planning Authority: PEAK PARK JOINT PLANNING BOARD, High Peak Borough Council, Sheffield City Council, Barnsley Metropolitan Borough Council, Kirklees Metropolitan Council, Oldham Metropolitan Borough Council, Tameside Metropolitan Borough Council

National Grid Reference: SK 110960

Area: 31,852.85 (ha.) 78,708.4 (ac.)

Ordnance Survey Sheet 1:50,000: 110, 119

1,10,000: SE 00 NW, NE, SW, SE,
SE 01 SW, SE, SE 10 NW,
SW, SE, SE 20 SW,
SK 08 NW, NE, SE,
SK 09 NW, NE, SW, SE,
SK 18 NW, NE, SW,
SK 19 NW, NE, SW, SE,
SK 29 NW, SW

Date Notified (Under 1949 Act): 1951

Date of Last Revision: 1972

Date Notified (Under 1981 Act): 1993

Date of Last Revision: –

Other Information:

Site boundary modified by major extension and minor deletion. The site incorporates the former SSSIs known as Kinder and Bleaklow, Mill Clough, Ladybower Tor, Alport Castles. Part of the site is listed in 'A Nature Conservation Review'; edited by D A Ratcliffe, Cambridge University Press, 1977.

Site Description and Reasons for Notification:

The main moorland area of the Peak District, known as the Dark Peak, lies to the north of the central limestone dome of the White Peak and extends through the Counties of West and South Yorkshire to the boundary of the National Park at Standedge. It includes the summits of Kinder Scout and Bleaklow in Derbyshire and Black Hill in West Yorkshire. This is wild, open and more or less continuous moorland, predominantly at an altitude of 400–600 m and broken only by trans-pennine roads from Manchester to Sheffield, over the Snake Pass; from Manchester to Barnsley along the Longdendale valley and over the Woodhead Pass and from Oldham to Huddersfield over Wessenden Head Moor. The Peak District moorlands overlie the grits, shales, sandstones and mudstones of the Millstone Grit series. The whole area is part of the Pennines anticline; the rocks sloping gently towards the east such that most of the gritstone edges face west where they occur along abrupt faults of downfolds in the strata.

The millstone grit weathers to produce a coarse, gravelly soil which may become podsolised through leaching by the 1500 mm rainfall of the region. More usually however, the gritstone is overlain by blanket peat which reaches its greatest depth on the plateaux. Blanket peat stretches the length and breadth of the Dark Peak with

natural breaks only on the steep slopes below the Kinder Scout plateau and along the Longdendale valley. It has formed since the last glaciation and peat development has been more substantial here than elsewhere in Britain, probably because deforestation occurred here earlier than elsewhere.

The present extent of peat was probably reached some 4,000 years ago and the Dark Peak peats being both old and deep display erosion which may be in part a natural, cyclical process that has been occurring on and off, since the onset of peat formation. Degeneration of the peat to an erosion complex has been accelerated by man-induced factors including pollution, burning and over-grazing. Blanket mire vegetation is particularly susceptible to atmospheric pollution from the surrounding cities. The thin soils and naturally acidic peat are a poor buffer for acid deposition. Also many plants growing in peatlands receive their nutrients from the atmosphere, which brings them into direct contact with pollutants. Atmospheric pollution has led to the loss of practically all bog mosses *Sphagnum*. Once vegetation has been lost and the peat exposed, erosion and oxidation of the peat inhibit plant recolonisation. Peat formation and erosion has been studied quite extensively in the Dark Peak by a number of researchers and the area is renowned for a wide range of erosion facies including linear, reticulate and sheet erosion, and extensive areas of characteristic grough and hagg topography.

The combination of plateaux blanket mires; wet and dry heaths and acid grasslands, together with associated flushes and mires on moorland slopes, represents an extensive tract of semi-natural upland vegetation typical of and including the full range of moorland vegetation of the South Pennines. Several vegetation types, plants and animals are at either the southern or northern limits of their distribution in this country. The Dark Peak moorlands support the full range of breeding birds found in the South Pennines, some of which are represented at their southern most viable English locations. The moorland breeding bird assemblage is of great regional and national importance. It includes internationally important populations of several species, listed in the European Commission Birds Directive as requiring special conservation measures. Many physical features of the Dark Peak are of geological interest and six such localities of special interest are described under the heading 'Geology'.

Vegetation

The blanket peats of the Dark Peak show the full range of blanket bog and soligenous mire mesotopes found in the region, and contain variable proportions of cotton grasses *Eriophorum* spp. and dwarf shrubs such as crowberry *Empetrum nigrum*, heather *Calluna vulgaris*, and bilberry *Vaccinium myrtillus*. In some areas the vegetation is dominated solely by hare's-tail cotton grass *Eriophorum vaginatum*. The site shows the full range of erosional features, and here the blanket mire is characterised by an abundance of crowberry and bilberry. The abundance of crowberry in uneroded cotton grass mire and on severely hagged peat has no parallel in Britain outside the southern Pennines. Common cotton grass *Eriophorum angustifolium* typically occurs throughout the blanket mires, but only becomes abundant on the deeper peats of the watershed. Heather is widespread and locally abundant or dominant on the blanket mires of Derbyshire and South Yorkshire. Associated higher plants of the blanket mire include cross-leaved heath *Erica tetralix*, usually no more than thinly scattered, cowberry *Vaccinium vitis-idaea* and cloudberry *Rubus chamaemorus*, an arctic-alpine species at the south-eastern limits of its British distribution. Cloudberry is locally frequent beneath heather, for example on Cloudberry Moor and amongst cotton grasses on Featherbed Top. Cowberry is more characteristic of hags and some drier blanket peat margins, for example on Edale Moor. Other plants which are characteristic of these communities include deer grass *Trichophorum cespitosum* and cranberry *Vaccinium oxycoccos*, which mainly occurs on the blanket mires of the High Peak. The nationally rare Labrador tea *Ledum palustre*, grows at a few localities.

As a result of high levels of atmospheric pollution, the blanket mires of the Dark Peak are poor in bog and other mosses sensitive to pollution. Within the deeper eroding peats there are abundant remains of a range of bog mosses indicating the former presence of a hummock-hollow system. There are a few areas where some bog mosses still occur including *Sphagnum capillifolium*, the most frequent bog moss within unmodified Pennine blanket mire, and *Sphagnum cuspidatum*, the main bog pool species in north western Britain.

Below the watersheds, the vegetation of the lower moorland areas largely consists of heathland dominated by heather, with areas of acidic grassland, and these areas display the full range of acidophilous dwarf shrub heath and acid grassland found in the region. Some of the heather moors have been regularly burnt to provide a supply of nutritious shoots for either red grouse *Lagopus lagopus* or for sheep. A variable proportion of other dwarf shrubs, mainly bilberry and crowberry may be found beneath heather and in older stands these may become locally predominant where heavy grazing has reduced the dominance of heather. Hypnaceous mosses are characteristically absent from the heather communities of the Dark Peak, except in some old stands of heather, particularly on steep cloughs and occasionally in bilberry heath. Cowberry is locally frequent amongst bilberry, particularly east of the Derwent Valley where in some areas it exceeds bilberry to become completely dominant, a most unusual condition in Britain, and bearberry *Arctostaphylos uva-ursi* is present at several locations in the Derwent valley; its southern-most station in Britain. Other locally uncommon plants present in the Dark Peak heathlands include common cow wheat *Melampyrum pratense*, which grows on the Langsett Moors, and dyer's greenweed *Genista tinctoria*, on the Broomhead Moors.

Wet heaths are of limited extent in the Dark Peak. Small stands of co-dominant heather, cross-leaved heath, and purple moor grass *Molinia caerulea*, are found in several areas, for example on the Derwent Moors. In some areas of the Derwent and Longdendale valleys a combination of burning and overgrazing has replaced wet heath vegetation with extensive stands of purple moor grass, to form a species-poor tussocky grassland.

Around the edges of the Dark Peak, continuous heavy grazing has replaced much heathland with some form of acid grassland. These unenclosed grasslands are, on the whole, species poor and dominated by a few species such as mat grass *Nardus stricta* and wavy hair-grass *Deschampsia flexuosa* with varying amounts of bracken *Pteridium aquilinum* or short bilberry. Wavy hair-grass is characteristic of eroding blanket peat margins, newly exposed mineral soils and shallow soils on heavily grazed slopes. Heath rush *Juncus squarrosus* is often present and is locally abundant or dominant, particularly on re-distributed peat. Purple moor grass dominates on some wet slopes.

The most botanically rich communities in the Dark Peak are the smaller mires and flushes, beneath springs and along seepage lines and streams. A wide variety of different types are found including the best example of a transitional valley mire in the Peak District. Also of note are mosaics of soligenous mires and transitions to valley mire and wet heath. The most common types of mire and flush are dominated by rushes, particularly soft rush *Juncus effusus*, or by common cotton grass, and these typically support star sedge *Carex echinata*, the bog moss *Sphagnum recurvum* and the moss *Polytrichum commune*; together with a range of other vascular plants such as marsh violet *Viola palustris*, bog asphodel *Narthecium ossifragum* and marsh pennywort *Hydrocotyle vulgaris*. Common cotton grass mires typically hold sizeable populations of cranberry and some feature round-leaved sundew *Drosera rotundifolia*, an uncommon species in the South Pennines. A complex of cotton grass flushes by Emlin Dike on the Bradfield Moors area has

the largest population of this species, of the order of tens of thousands of individual plants, in the Peak District.

Seepage lines through common cotton grass mires and below springs can be particularly rich in herbs, with blinks *Montia fontana*, bog pondweed *Potamogeton polygonifolius*, water forget-me-not *Myosotis secunda* and occasionally lesser spearwort *Ranunculus flammula* and round-leaved crowfoot *Ranunculus omiophyllus*. Lesser skullcap *Scutellaria minor*, a species near the north eastern limit of its range in Britain, is present at several localities.

Where the mires are relatively rich in mineral salts, various sedges such as carnation sedge *Carex panicea*, are often prominent. Several locally uncommon herbs such as devil's-bit scabious *Succisa pratensis*, sneezewort *Achillea ptarmica*, marsh arrow grass *Triglochin palustris* and spotted orchid *Dactylorhiza maculosa* add interest to these communities. Bog pimpernel *Anagallis tenella* may be found in lawns of brown mosses and butterwort *Pinguicula vulgaris* is present in several stony flushes, particularly in the Derwent area. There are also a number of sites for the locally rare ivy-leaved bellflower *Wahlenbergia hederacea*, here at the north eastern limit of its British distribution. In contrast to the blanket mires of the watershed, the flushes and related communities invariably support several species of bog moss, with as many as ten species present in one area.

On inaccessible cliff ledges, beech fern *Phegopteris connectilis*, oak fern *Gymnocarpium dryopteris* and marsh hawk's-beard *Crepis paludosa* often grow, usually where there is some flushing and frequently alongside greater wood rush *Luzula sylvatica*, another species sensitive to grazing. These three more locally rare plants are, with the exception of a few outlying stations, at the south eastern limit of their British range.

Many of the Dark Peak's woodlands have been open to grazing in recent times and have consequently suffered from lack of regeneration. Sessile oak *Quercus petraea* wood is the main type of woodland present and is characteristic of shallow soils on the steep slopes of cloughs. It typically consists of oak and birch *Betula* spp. over a ground flora dominated by wavy hair-grass which at some sites also includes bilberry and buckler fern *Dryopteris dilatata*.

Small areas of species-rich alder *Alnus glutinosa* woodland are also present along some cloughs, with species such as yellow pimpernel *Lysimachia nemorum*, opposite-leaved golden saxifrage *Chrysosplenium oppositifolium*, wood sorrel *Oxalis acetosella* and mountain fern *Oreopteris limbosperma*. Small areas of willow *Salix* carr are also present, for example in the Alport valley.

Birds

The vast blanket mires of the Dark Peak plateaux support nationally important breeding populations of golden plover *Pluvialis apricaria* (1.7% of the British population) and dunlin *Calidris alpina* (0.9% of the British population) as well as very significant numbers of meadow pipit *Anthus pratensis*, the most common passerine throughout the area. Dunlin tend to concentrate into a few areas of blanket mire without significant amounts of heather. Their density is typical of those other moorlands, where they occur, in Northern England and Scotland. Golden Plover by contrast are common throughout most of the Dark Peak, although they tend to be associated more strongly with the high altitude plateaux towards the centre of the moorland blocks and the density of breeding birds is high compared to other populations to the north. Meadow pipits and other small song birds form the staple prey of merlin *Falco columbarius*.

On the better draining slopes below the plateaux blanket mire, areas of heath and acid grassland support significant numbers of breeding curlew *Numenius arquata*

red grouse *Lagopus lagopus*, merlin (3.3% of the British population), short-eared owl *Asio flammeus* (1.1 % of the British population) and twite *Carduelis flavirostris*. Curlew show a marked tendency towards the lower altitude heath and grassland around the periphery of the moorlands in the south, but are more evenly distributed in the north where they also breed on blanket mire. Red grouse are strongly associated with heather-dominated vegetation and are common throughout the area, though their stronghold appears to be towards the west of the Dark Peak. The heather moors of the Dark Peak provide the breeding habitat for an expanding and nationally important population of merlin. They nest in stands of old leggy heather often near the head of valleys where they can command a view over the surrounding moorland. Although short-eared owls are still a rare breeding bird of the area and the size of the population fluctuates between years, it is probable that there has been an increase in the population and the numbers which have bred in recent years are of national importance.

The south Pennine population of breeding twite is probably of international significance. Not only is it the most southern population in Britain, but it is also isolated from other populations in Scotland, Ireland and Scandinavia which are themselves disjunct from those birds occupying the mountains of Central Asia. Over a quarter of the south Pennine birds breed within the Dark Peak, (only a few breed further south on other Peak District moorlands), so this site is important to the maintenance of this population. Twite are found in locations throughout the Dark Peak, but are particularly concentrated in the north east where they favour a mixture of habitats including tall heather for nesting and roosting and rough grassland areas for feeding.

Peregrine *Falco peregrinus*, like merlin, have enjoyed a post-pesticide recovery and are increasing in numbers (0.8% of the British population) but they still remain a rare breeding bird throughout the Dark Peak. Some cloughs and gritstone edges, with their associated boulder strewn slopes with bracken, support significant populations of ring ouzel *Turdus torquatus* (0.7% of the British population), many wheatear *Oenanthe oenanthe* and small populations of whinchat *Saxicola rubetra*, which appear to be associated with bracken heaths.

The woodlands of the Dark Peak support small numbers of woodland and woodland edge birds such as tree pipit *Anthus trivialis*, redstart *Phoenicurus phoenicurus* and green woodpecker *Picus viridus*. In addition, wood warbler *Phylloscopus sibilatrix* and pied flycatcher *Ficedula hypoleuca* breed on a regular basis in Ladybower Wood.

The major moorland blocks are dissected by large rivers. The upland tributaries which feed them, together with moorland reservoirs, provide a habitat for small populations of waterside birds. Dipper *Cinclus cinclus* are rare breeding birds and grey wagtail *Motacilla cinerea* are thinly distributed across the Dark Peak streams. Common sandpiper *Actitis hypoleucos* breed on some streams and small upland reservoirs, but are more commonly found on the shores of the larger rivers and reservoirs nearby.

Invertebrates

Trapping of invertebrates, mainly in the 1970s and 1980s, has begun to reveal a rich and varied upland fauna. The moth fauna includes species such as red carpet *Xanthorhoe munitata*, northern eggar *Lasiocampa quercus callunae*, northern rustic *Standfussiana lucerneae*, and two nationally scarce species, golden rod brindle *Lithomoia solidaginis* and small autumnal moth *Epirrita filigrammaria*. A nationally scarce hover fly *Eristalis rupium* has been recorded. The only known breeding site in the county of Derbyshire for the golden-ringed dragonfly *Cordulegaster boltonii* occurs within the SSSI.

The site has a particularly good beetle fauna. Seven nationally scarce species have been recorded in a variety of habitats, including *Miscodera arctica* from heather moorland and dry gritstone grassland; a Red Data Book (RDB) species, *Hydnobius spinipes* from the roots of rushes; *Leptusa norvegica* from deadwood; the RDB species, *Leiodes picea* and *Omalium laticolle* from woodland soils and litter; and *Bolitochora mulsanti*, and *Phyllodrepoidea crenata* in association with woodland fungi.

Geology

Six locations of special geological interest are identified within the Dark Peak: a land-slip, the rocks exposed behind the land-slip, a classic example of stream erosion on peat, an area of delta-formed sedimentary rock, an area of river evolution and an area of classic peat erosion.

Alport Castles (SK142914) is the largest inland landslide in England where there is demonstrably no connection with the processes of marine erosion. It comprises a massive single block movement involving the whole valley side, from crest to the river, leaving a high vertical backface, a tall pinnacled ridge and a massive flat-topped detached sandstone mass. A complex range of features associated with landslipping in the Millstone Grit is found and the cliff behind, the landslide exposes valuable sections through rocks laid down in mid-Carboniferous times, some 320 million years ago, including the Shale Grit of Kinderscoutian age. These rocks were laid down on the margins of a vast delta which occupied this area at that time, and provide a valuable area of research for geologists. The extensive exposures in this area display a wide selection of sedimentary features, the study of which has led to a greater understanding of turbidite deposition on the apron of a large delta.

Bleaklow (SK 183965) (Bull Clough Head) on Howden moors is considered a classic example of stream erosion in peat. Additionally, the headwaters of two river systems meet here, and the tributaries of the River Derwent have captured some of the headwater streams of the River Little Don, through their greater erosive power. This site is of great interest in studies of the development of river landforms.

At **Blackden Brook** (SK 115884–130893), rock outcrops within the site provide an excellent and almost continuous sequence through sandstones and shales formed about 310 million years ago during the Carboniferous Period. The rocks which include the Shale Grit, Grindslow Shales and Lower Kinderscout Grit, originally accumulated as sediment on a large delta built southwards by a major river which flowed from uplands to the north. This succession has provided valuable information about the various stages associated with the advancement of the Kinder Scout Delta. A number of sediment associations were first recognised in this sequence, which illustrates the great variability of delta slope depositional processes.

The form of the **Alport Valley** (SK118938) and other features within it are characteristic of river landforms developed on bedrock. Within this section of the valley a wide range of features can be seen, illustrating many aspects of the evolution of the river and is thus a valuable site for study and research of river landforms.

Featherbed Moss (SK 094024) is an important site for studies of Flandrian vegetation history and peat erosion in the Pennines. Pollen analysis and radio carbon dating have provided a detailed record of vegetation changes and peat development. From this record, two main periods of active peat erosion are identifiable during the last 200 years and c. 900 AD. The site contains all the peat erosion types now recognised in the southern Pennines and is important for studies of both past and present peat hydrology and erosion.