MOORS FOR THE FUTURE PARTNERSHIP

MOOR PLACES

Welcome to Moors for the Future Partnership's guide to the landscape features of the UK's peatlands.

Use this guide to try your hand at spotting and identifying some of the classic sights that help to make moorlands such important and unique places.

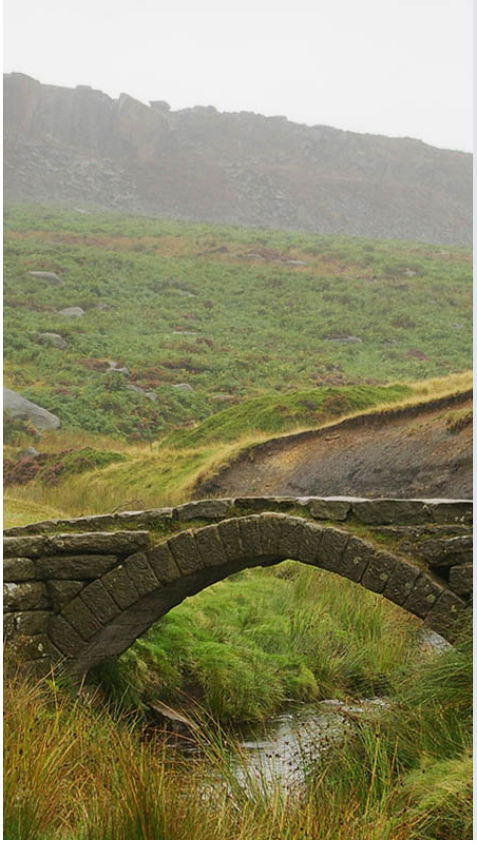
Download the Explore Moor app

PREHISTORIC SETTLEMENT AND RITUAL

- Evidence of prehistoric settlement survives on a number of moorland sites. Remains can include field systems, house sites, clearance cairns, barrows, ring cairns and stone circles.
- Thought to be largely of later prehistoric date (approximately 2000 – 500 BC) these extensive complexes include field systems which survive as low stone banks or turf covered lynchets, remains of house sites appear as levelled circular platforms and on the edges of these areas of activity are burial mounds (barrows) and ritual features such as ring cairns and stone circles.
- Small mounds of stones, or clearance cairns, are interspersed amongst the field system enclosures. Most of these mounds are simply heaps of stone – the result of clearing land for cultivation. Recent excavations have revealed however that some overlie grave pits or include human cremations in urns.
- Some areas have had extremely detailed archaeological surveys, along with sample excavations – so we know quite a lot about how people lived in these places. Because of the antiquity, well preserved nature and extent of these sites most have been Scheduled as Ancient Monuments. This means that it is unlawful to damage or disturb the remains in any way.

TOOLS & ARROWHEADS

- Stone tools have been found widely across moorlands, including flint and chert (a fine-grained, sedimentary rock) artefacts. These are comprised of arrowheads, scrapers, knives, axes and the tools used to make them. They predominantly turn up as a result of today's farming activities although others have come to the surface due to the erosion of peat or as earth moved from animal burrows. Owing to the scale of activity ploughed fields have yielded some interesting finds.
- Significantly several hundred polished axe heads from the Neolithic have been found in the lowlands of the area, suggesting that these tools had symbolic rather than an entirely practical value.
- Artefacts from early prehistory, when people lived as hunter gatherers and moved through the landscape seasonally following herds of game, are frequently found in the uplands, particularly where peat erosion has revealed mineral soils. These are typically microliths, small carefully shaped points made from flint or chert. Flint arrowheads of Neolithic (4000–2000 BC) and Bronze age (2000–800 BC) date are also found in these locations as elevated positions above valleys were favoured hunting sites.



PACKHORSE ROUTES

- Before formal roads were established, packhorse routes traversed many of the Peak District moorlands. Originating in the medieval, and possibly earlier, goods such as lead ore, peat, charcoal, and salt were transported on these routes between production centres.
- Evidence of these routes survive today as braided hollow-ways – networks of sunken tracks which have developed as travellers abandoned an existing route which had become too boggy, for drier ground. Some are also defined by flagged pavers.
- A number of packhorse bridges, built where these routes crossed water courses, still survive today in moorland locations. Thought to be largely of 17th and 18th century construction they are just wide enough to allow the passage of a string of horses.

HILL FORTS

- A prominent archaeological feature found on some moorlands is a hill fort.

SHEEP FOLDS

- Sheep folds were (and still are) built as a gathering points for stock. Often rectangular (but also round) older ones are made of local stone and they may contain sub-compartments. It is now more practical for farmers to use moveable fences.

QUARRIES, MINES & SPOIL HEAPS

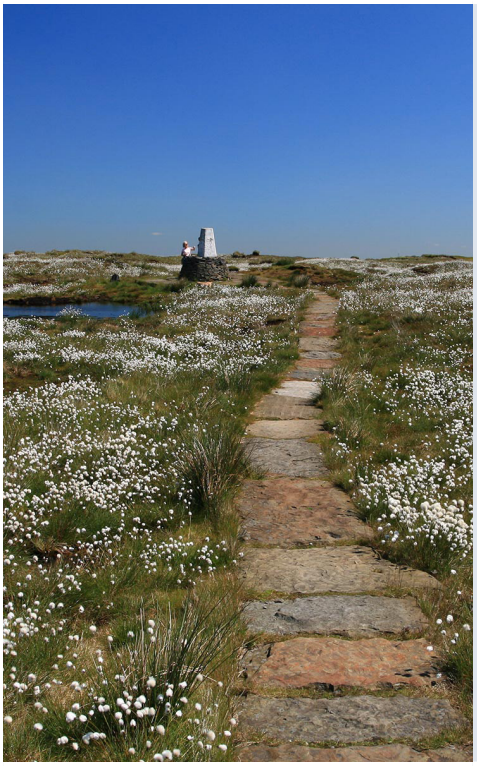
- Industry has played a significant part in the history of some moorlands and myriad quarries, limekilns, mines and their spoil heaps still survive in the upland landscape. On the moors, the industrial remains which occur most commonly are gritstone quarries of various scales. These may be small, moorland edge delves for walling stone or millstones, or massive complexes.
- Evidence of early coal mining also survives on some moorland areas. These can comprise of mine shafts, causeways, gin circles (the foundations of horse-powered winding mechanisms for drawing up coal) and waste heaps.

AIRCRAFT WRECKS

- There are a number of aircraft wrecks on the moors.

MILLSTONES

- Watermills have been present since at least the Saxon times. These early mills were mainly built for the production of flour but they were joined later in the 18th century by those producing textiles, largely cotton.



TRIG POINTS

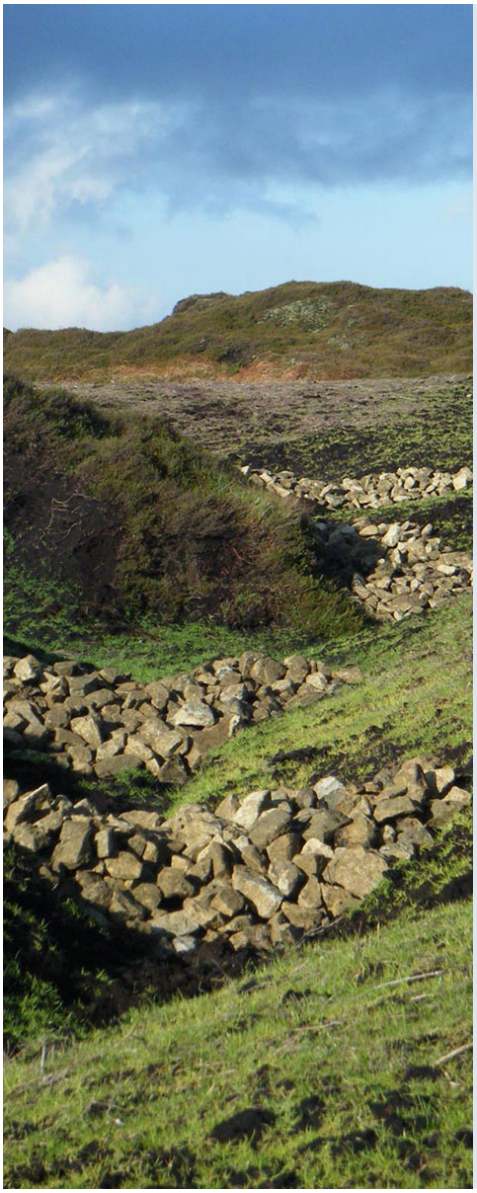
- Trig points are typically truncated, square, concrete (occasionally stone) pyramids or obelisks tapering towards the top, and were erected by the Ordnance Survey.
- On the top of each trig point is a brass plate with three arms and a central depression. This was used to mount and centre a theodolite which was used to take angular measurements to neighbouring trig points.
- A benchmark is usually set on the side, marked with the letters "O S B M" (Ordnance Survey Bench Mark) along with the reference number of the trig point. Although many stations are no longer required for surveying purposes, they remain useful to hikers as navigational aids when hill-walking.

SHOOTING BUTTS

- These can be seen on many of the moors and are small structures built of stone, timber or simply turf.
- They are generally of simple rectangular or circular design and are used during the grouse shooting season to help conceal hunters from the driven birds. Often there are eight or nine shooting butts forming a row.

GRIPS

- Grips are drainage ditches which have been dug in the moors. Unlike erosion gullies, which meander across the moors, grips are very obviously man made. They are characteristically straight and you may find areas where many run in parallel. They were dug in order to improve grazing and the heather moors.
- Grips are often blocked using peat dams or plastic piling. This helps restore the water table and prevent further peat erosion.



GULLY BLOCKING WITH DAMS

- This conservation technique is carried out on areas of bare peat where there gullies (eroded areas of peat often in old drainage channels) have formed. In situations where restoring the vegetation is not sufficient to repair the damage, the gullies themselves need to be blocked by creating a dam. These dams aim to aid revegetation, reduce erosion, trap sediment and increase water-table levels.
- Gullies in bare eroding peat can be blocked with a variety of methods, including stone, heather bales, timber and plastic dams. Different materials have been used to suit the situation and the desired outcomes. Blocking normally starts at the top of the gully, where it is causing immediate damage to the peat, and continues downstream.
- Each gully is unique and needs a tailored approach. For example, natural stone dams can be used in large gullies (up to four metres deep and three metres wide) and are suitable for any kind of substrate (peat, mineral soil or bedrock). Stone dams are also very good at trapping sediment and are also very stable. Heather bale dams are used where slopes are gentle and stop the flow of water across the surface of the bog. They are also good at trapping sediment. Timber and plastic dams are preferred where more water needs to be held in place.

GEOTEXTILE

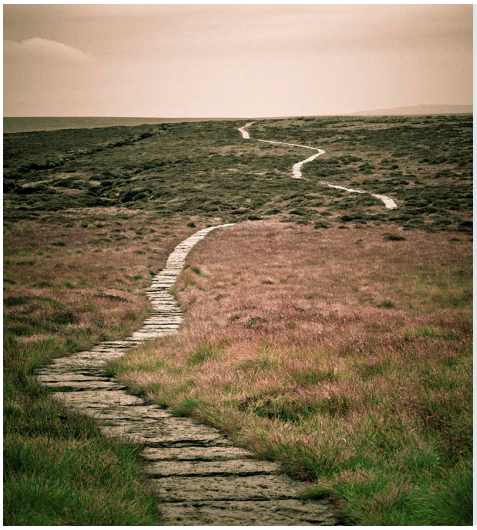
- Some landforms like gullies have very steep sides, and heather brash will not stay in place. In cases like these, water permeable landscaping fabric (geo-textile) can be used. It is completely biodegradable, but stays in place long enough to allow seeds to become established (around three years) and the peat to stabilise.

DIPWELLS

- You may come across "dipwells" whilst walking across the moors. These are water-level measuring stations. The readings provide valuable information on the effect of conservation work, which aims to "rewet" the moors and provide the right conditions for plants like sphagnum – vital to peat formation in active blanket bog.
- Monitoring takes place on intact peat which has not been damaged by industrial pollution or wildfires, areas of bare peat, as well as areas that have undergone conservation work.
- The dipwells are checked manually, by blowing down a tube which is lowered into the well. When the tube reaches water, audible bubbles are produced and the resulting depth is measured and recorded. This approach might seem low-tech but has proved to be very effective and reliable.

FOOTPATH WORKS

- Popular footpaths suffer from increased foot-traffic which can cause erosion scars in the landscape. The situation is made worse by the action of water washing away the loosened soil. As walkers skirt around the edges of eroded and boggy areas, paths widen, plants become trampled and the birds that nest on the ground, often close to paths, are disturbed. Birds frightened from their nest leave eggs or young vulnerable to prey, the cold and even the risk of trampling.
- Repairs and renovations are carried out to prevent further erosion and protect the landscape using materials and techniques for different reasons. Flagstones are laid over bare peat, pitching stone is used on steeper sections. Paths are landscaped and unified, removing extra strands. Water management features including ditches, water bars and fords help reduce the effect of erosion caused by rainfall.



FLAGSTONES

- Flagstones are a relatively common sight across the moors and have been used to avoid further erosion to well used footpaths. Most came from derelict textile mills.
- Flagstones have been laid over areas of deep peat to protect it from walkers' feet – this allows the bare peat to recover and return to its natural vegetated state. It also helps walkers by giving them a firm surface underfoot.

HEATHER BRASH

- Bare peat is very susceptible to erosion from wind, water and trampling from walkers.
- Covering bare peat with cut heather (brash) can help to stabilise the peat by creating a skin that protects it from erosion and creates a microclimate that helps to shelter seeds from harsh weather. Seeds can also be added as part of the lime, seed and fertiliser works or can also be found in the heather brash along with beneficial spores and fungi. As the plants grow they form a network of roots that help to keep the soil in place.
- GIS (Geographic Information System) mapping and aerial photography helps to identify areas suitable for treatment. The site is then physically checked. Once the size of a site is confirmed, the amount of brash required to cover it can be calculated. On average, one hectare of bare peat requires around 200 bags of brash.
- Heather is cut in autumn when the seeds are ripe, collected into huge bags and transported by road to a collection point where it is flown up onto the moors by helicopter – from there it is spread by hand. It's hard physical work which is often interrupted by winter snowfalls that can cover the eroded peat, forcing work to stop until the snow thaws. It's a battle against the elements and a race against time to spread the brash before the bird nesting season starts.

HEATHER MANAGEMENT

- Heather moorlands require active management if they are to remain as heather moors. Without management heather moors will become dominated by mature heather and will be succeeded by colonising tree species such as birch and willow.
- Heather cutting is an alternative approach to managing heather through rotational burning, and is preferable on areas of deep peat, where burning can kill off the sphagnum understorey and cause the peat to dry out.
- The material produced by cutting can be used to protect areas of bare peat from erosion elsewhere, further reducing the release of carbon into the atmosphere. (See the Heather Brash entry for further information).

PLUG PLANTS

- The aim of peatland conservation is to restore active blanket bog (the term used to describe areas where peat is actively being made). Plants growing on these intact areas are often too far from restoration areas for the seeds to disperse naturally. This makes it difficult for some of the species which make up blanket bog to naturally re-colonise newly stabilised areas. To speed this process up we propagate appropriate species and plant them out as partially grown (plug) plants.
- Six species that are key, along with sphagnum moss, to making up the active blanket bog vegetation community:
  - Cloudberry (*Rubus chamaemorus*)
  - Hare's-tail cotton-grass (*Eriophorum vaginatum*)
  - Common cotton-grass (*Eriophorum Angustifolium*)
  - Bilberry (*Vaccinium myrtillus*)
  - Crowberry (*Empetrum nigrum*)
  - Cross leaved heath (*Erica tetralix*)

SPHAGNUM APPLICATION

- To complete the restoration of an active blanket bog, where the top layer (acrotelm) contains living plants and is actively creating more peat, sphagnum mosses need to be reintroduced. In areas of severly degraded peatlands, sphagnum mosses have declined drastically, largely due to historical industrial pollution.
- Because of the rarity of sphagnum to act as a source material, new methods of reintroducing it over large areas have been developed. Different species of sphagnum mosses can be propogated using the same micro-propagation techniques used for growing plug plants.
- Each small sphagnum plug is about the size of a 50p coin. They are planted out by hand in a targeted application. Over time these sphagnum plugs will grow to gradually restore the sphagnum layer.
- Where there is sphagnum already growing nearby, the material can be translocated in hummock form to provide an established plant, without damaging the original donor location.
- An advantage of using plug plants and hummocks is the plants take less time to become established.

Moors for the Future Partnership

Since 2003, Moors for the Future Partnership has been working to reverse more than 200 years of damage from industrial pollution and wildfires that left large areas of uplands bare of vegetation in the South Pennine Moors Special Area of Conservation and Special Protection Area.

The £16 million EU LIFE MoorLIFE 2020 project is a key part of the initiative, preserving biodiversity and protected active blanket bog, an EU priority habitat, by restoring moorland habitats of European importance in the Peak District and South Pennines.

The project has key benefits for communities on both sides of the Pennines and beyond in terms of improved landscape and its resilience, water quality and diversity of upland fauna and flora. These rare blanket bogs are home to many important birds including the endangered twite, curlew and golden plover. Peat-forming sphagnum moss, which had nearly disappeared from this area due to industrial pollution and wildfires, and other key upland plants – heather, cottongrass, bilberry, crowberry, cloudberry and cross-leaved heath – has been re-introduced.

MoorLIFE 2020 is a Moors for the Future Partnership project in the EU-designated South Pennine Moors Special Area of Conservation. It was delivered by the Peak District National Park Authority as the lead and accountable body (the Coordinating Beneficiary). On-the-ground delivery was undertaken largely by the Moors for the Future staff team alongside staff of the National Trust High Peak and Marsden Moor Estates, the RSPB Dove Stone team and The South Pennines Park (the Associated Beneficiaries).

Moors for the Future Partnership is led by the Peak District National Park Authority. It receives financial support from the Environment Agency, National Trust, South Pennines Park, RSPB, Severn Trent, United Utilities, Yorkshire Water, and support and advice from Natural England, National Farmers Union, Heather Trust, Woodland Trust, ethical finance sector and the British Mountaineering Council.

Find out more at **www.moorsforthefuture.org.uk**

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