



MOOR PLANTS

Welcome to Moors for the Future Partnership's printable guide to some of the classic moss and plant species that are characteristic of the UK's peatlands.

Use this guide to try your hand at spotting and identifying them and find out how they help make the moors such important and unique places.

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Explore Moor app





AUSTIN'S BOG-MOSS

Sphagnum austinii

- Big, often hard hummocks or carpets to 50cm in height. Branches are “maggot” shaped.
- Hazel-nut brown often with a greenish centre to capitula (growing tips).



RED BOG-MOSS

Sphagnum capillifolium

- Forms dense, firm hummocks or carpets. Also found in small patches.
- The capitulum (the growing tip) often looks like a pom-pom. Surface of the hummock is bumpy, resembling cauliflower florets.
- Plants are all or mostly dark wine-red except if shaded, when they are green.



FEATHERY BOG-MOSS

Sphagnum cuspidatum

- Larger than most species, with very long narrow leaves, looking “feathery” when floating.
- Messy-looking (like matted wet fur) when lifted out of water.
- Usually green, sometimes with mustard colours. Almost white in colour when dry.



COW-HORN BOG-MOSS

Sphagnum denticulatum

- Variable in shape, usually in patches or carpets. Upper branches are smooth and often curved like a cow's horns.
- Green or yellowish, sometimes dark copper.



FLAT-TOPPED BOG-MOSS

Sphagnum fallax

- Variable in shape, in extensive carpets or small patches.
- Capitula (growing tips) are star shaped, convex and mostly green, sometimes with mustard colours.
- Tolerant of some pollution.



FRINGED BOG-MOSS

Sphagnum fimbriatum

- In loose carpets and patches, with long, thin, drooping branches.
- Stem leaves form a fringed “ruff” at stem apex (visible with a hand lens).
- Capitula (growing tips) are small, with a very conspicuous terminal bud in the centre.
- Green, often a whitish-green.
- Often with reproductive “capsules” present.



RUSTY BOG-MOSS

Sphagnum fuscum

- Forms compact, distinctly smooth looking hummocks.
- Ginger brown colour is very characteristic and **S. fuscum** never shows any trace of red or pink. Green forms do, however, occur occasionally. Stems are dark brown/black.



MAGELLANIC BOG-MOSS

Sphagnum magellanicum

- In low hummocks or carpets.
- Usually red, dark wine-red and rarely green (when shaded). The only chunky red species. Can look brownish when it dries out.



BLUNT-LEAVED BOG-MOSS

Sphagnum palustre

- In low hummocks, carpets or large, untidy mats.
- Straw-coloured to green, sometimes with flecks of salmon-pink.
- Brown in centre of capitulum (growing tip) in autumn and winter, which contrasts with paler outside branches.



PAPILLOSE BOG-MOSS

Sphagnum papillosum

- Big fat shoots and grows into hummocks or carpets.
- Typically a pale brown-yellow colour but can be green. Never any red present. On bogs, any trace of red in the leaves or stem of a plant signifies that the plant is **S. magellanicum**



LUSTROUS BOG-MOSS

Sphagnum subnitens

- Loose hummocks or small patches.
- Brick-red or salmon pink to green. Centre of capitulum (growing tip) often green with red “halo” around edges.
- Characteristic metallic sheen when plants have dried out.
- Capitulum (growing tip) less than 2cm wide and in dense hummocks the outer branches grow up above the centre making the capitulum appear somewhat concave.



SOFT BOG-MOSS

Sphagnum tenellum

- The smallest UK species. In carpets or mixed with other species. Fragile and disintegrates when handled.
- Leaves at branch ends sometimes stick out like crab's claws.
- Often green, though it can be more brightly coloured especially in upland habitats.



BROOM FORK-MOSS

Dicranum scoparium

- Yellow-dark green in colour this moss forms cushions and grows to about 10cm in height. Leaves, which are 4–7.5mm in length are thin, spearhead-shaped and taper to a fine point.



HEATH STAR-MOSS

Campylopus introflexus

- A small (to 5cm but usually far smaller), compact species which is easy to recognise. Has hairy tips to the shoots which give it an almost cactus-like appearance when dry. Hairs largely held at right-angle to shoot with a few pointing up.



BOG BEAD-MOSS

Aulacomnium palustre

- Grows between 3–12cm in height and forms tufts. Leaves are a pale yellow-green, spear-shaped and 4–6mm in length. The stems often have ginger-brown felt-like rhizoids (hairy growths) growing on them.



WOOLLY FRINGE-MOSS

Racomitrium lanuginosum

- Forms attractive hummocks of wiry and generally unbranched shoots all pointing upwards. Can grow as tall as 40cm but usually to 20cm. Star-like form when viewed from above. When present the 4-sided, box-like capsule (produced in summer) is distinctive and produced on a long (to 12cm), reddish stalk.



RED-STEMMED FEATHER-MOSS

Pleurozium schreberi

- Generally easy to recognise with its feather-like branching structure, red stems and bright yellow-green or bright green leaves. The leaves, which are 2–2.5mm long, are oval in shape with a broad, blunt tip. It is a large (shoots 2 to several centimetres long), irregularly branched, upright, grey-green plant with a conspicuous hair point at the end of 3–6mm long leaves that often curve in one direction. Leaves are also concave and envelope the stem.



LITTLE SHAGGY-MOSS

Rhytidiadelphus loreus

- Shoots can grow to 20cm in length. Branches irregularly so not symmetrical. Like *Pleurozium schreberi* it has a red stem. Leaves are about 3mm in length and have a broad, oval base, which narrows to a long, tapering tip that point in the same direction.



WAVED SILK-MOSS

Plagiothecium undulatum

- A large, conspicuous and distinctive moss which is flattened. The pale-green shoots are several cm long and about 5–6mm wide. Leaves arranged in opposite pairs, giving this moss a neat appearance.



HEATH PLAIT-MOSS

Hypnum jutlandicum

- Shoots are 2–3cm in length and leaves are very small – usually under 2mm in length. Leaves curl under at the tip. This moss is normally a washed out pale-green colour and is irregularly branched.



LIVERWORTS

Marchantiophyta

- The most familiar and distinctive Liverworts are the Thalloid Liverworts which have a flattened, prostrate growth form with overlapping scales/leaves. The Leafy Liverworts have more species and tend to look more moss-like.



REINDEER LICHEN

Cladonia portentosa

- An easily recognisable lichen evocative of arctic tundra. It has a thin “stem” with branches usually dividing into three but with the penultimate sometimes dividing into two. Generally grey, green-grey in colour. Grows to 6–7cm in height and may be found in small discrete patches or form large mats.



BRITISH SOLDIER LICHEN

Cladonia floerkeana

- A very distinctive, upright lichen with red-capped branches (known as “Podetia”) which some liken to a red-tipped match stick. This species can grow between 1–3cm but more often is found 10–30mm in height.



FALSE PIXIE CUP

Cladonia chlorophaea

- A small (2–3cm), upright species of lichen which has a stick-like growth form. Each fruiting body (“podetia”) terminates in a concave cup. Light green, grey-green in colour.



FIR CLUBMOSS

Huperzia selago

- Neat looking evergreen perennial which grows in an erect fashion (to 25cm, but usually much smaller). Stems covered in dense spiral of small leaves.



BRACKEN

Pteridium aquilinum

- Tall – up to 3.5m in height although usually to 1.5m.
- Bracken is deciduous and spreads via rhizomes and forms extensive stands – it is a well-adapted pioneer plant which can colonise land quickly. This ability to expand rapidly is at the expense of other plants and wildlife and can cause major problems for land users and managers.
- Often a dominant plant on heaths and moorlands.



LEMON-SCENTED FERN

Oreopteris limbosperma

- A yellow-green fern which is lemon scented (when leaves crushed).
- Grows to 120cm.
- Lower surface of leaves covered by multiple small brown-yellow glands. Pinnae (leaves either side of stem) decrease in length towards base of stem with those at the bottom very small.



HARD-FERN

Blechnum spicant

- Hard fern has once pinnate fronds (the “pinnae” or leaves off the stalk don’t split again) making them relatively easy to identify. If the spore carrying “sori” are present there are two that run the length of the leaf (pinna) in parallel. Can grow up to 50cm.



BROAD BUCKLER FERN

Dryopteris dilatata

- Has olive-green to dark or bluish green fronds which can grow to 150cm in length. They appear in dense crowns and usually arch outward from the crown giving an inverted shuttlecock appearance.
- Remains green throughout most of winter.
- Leaves are 3 x pinnate (branch 3 times). Stem has scales at base which are dark in the centre and light at the edges.



GORSE

Ulex europaeus

- Extremely spiny, evergreen shrub which can grow to 2m in height and may form dense stands.
- Wonderful, bright yellow, coconut scented flowers (December–July).



CLOUDBERRY

Rubus chamaemorus

- Short creeping plant with single flowers. Fruit rarely seen. Grows only to 10–25cm.
- The leaves alternate between having 5 and 7 soft, hand-like lobes on straight, branchless stalks.
- After pollination the white (sometimes reddish-tipped) flowers form edible raspberry-sized berries. Each fruit is initially pale red, ripening into an amber colour in early autumn.
- Interestingly cloudberry plants are dioecious meaning that there are both male and female plants.
- Cloudberry is one of the plants that is used to help restore areas damaged by erosion. These plants will help to continually enhance the biodiversity of the moor thanks to their ability to stabilise peat effectively in different situations, and provide a natural cover of flora which is important to a wide range of wildlife.



TORMENTIL

Potentilla erecta

- Low growing, creeping perennial with glossy, dark green and deeply toothed leaves. Leaves are 3–5 lobed and those near the base have long stalks. Stem leaves are sessile (no stalk so directly joined to stem).
- Flowers (June–September) are yellow and have 4 petals.
- Prefers slightly acid soils.



BIRCH

Betula spp.

- A genus consisting of broad-leaved, deciduous “pioneer” species (often one of the first tree species to establish in disturbed habitats and those without active management or grazing regimes).
- The most familiar and common of the genus in the UK is the Silver birch (**Betula pendula**) – easily recognised by its papery, silver bark and triangular-diamond shaped leaves.



WILLOW

Salix spp

- Willows come in a variety of different shapes and sizes. They are most recognisable in the early spring when many bear the familiar furry silver and then yellow catkins.
- They prefer damp habitats and specialise in growing in boggy areas or those adjacent to water bodies.



MARSH VIOLET

Viola palustris

- Short plant with small, kidney shaped leaves.
- Attractive lilac flowers with dark veins (April–July).
- Likes acid bogs, marshes and wet woodlands.



ROSEBAY WILLOWHERB

Chamerion angustifolium

- Tall perennial which grows up to 150cm.
- Lanceolate leaves arranged in a spiral around stem.
- Flowers (July–September) have four petals that are a deep pink and form a tapering spike. The feathery seeds can be seen blowing across the land in their thousands on a windy day.
- Forms dense stands often on disturbed ground.



SHEEP'S SORREL

Rumex acetosella

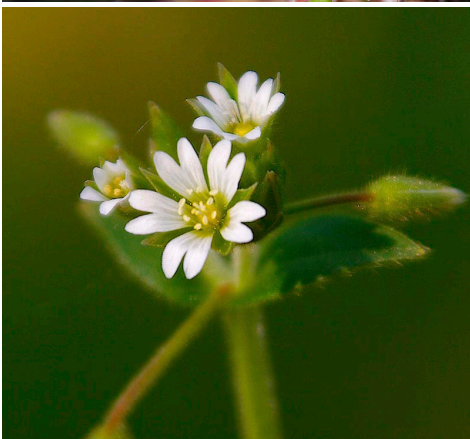
- Grows in short vegetation, often with bare rock and soil. Short (<20 cm). When in flower (May–September) can cast a deep orange-red haze over the vegetation when abundant.
- It has green arrowhead-shaped leaves and red-tinted deeply ridged stems.



COMMON SUNDEW

Drosera rotundifolia

- Insectivorous perennial with rounded leaves arranged in a basal rosette.
- Each leaf adorned with long, sticky hairs.
- Small white flowers borne on long stem (June–August).
- Found on acid peat-based soils, among sphagnum, wet heaths and bogs.



COMMON MOUSE-EAR

Cerastium fontanum

- A small, hairy perennial that can sometimes form quite large mats.
- Flowering shoots grow vertically (to 40cm) and have pretty, small white flowers. Non-flowering stems have a prostrate growth form.



CROWBERRY

Empetrum nigrum

- Low growing, evergreen, heather-like shrub with alternate leaves.
- Pink flowers (May–June) and produces blue-black edible fruit.
- Crowberry is one of the plants that is used to help restore areas damaged by erosion. These plants will help to continually enhance the biodiversity of the moor thanks to their ability to stabilise peat effectively in different situations, and provide a natural cover of flora which is important to a wide range of wildlife.



RHODODENDRON

Rhododendron spp.

- A large evergreen shrub with leathery leaves which form a spiral around stem.
- Has attractive purple to pink flowers (May–June) borne in terminal, round clusters.
- Woody stems form into a trunk when mature. Often forms round-shaped bushes.
- Introduced to the UK and invasive.



COMMON HEATHER

Calluna vulgaris

- Low-growing perennial shrub generally 20–60cm tall, but sometimes much shorter.
- It is the dominant plant in most heathland and moorland in Europe, and in some bog vegetation. It has small scale-like leaves (less than 2–3mm long) borne in opposite and crossing pairs.
- Flowers emerge in late summer; in wild plants these are normally mauve (and occasionally white).
- Common heather seed is applied as part of bare peat restoration, known as “brash works”, as it helps to stabilise and restore large areas of damaged moorland.



CROSS-LEAVED HEATH

Erica tetralix

- Leaves are a grey-green colour, in whorls of 4, and hairy. Grows to 60cm.
- Pink, bell-shaped drooping flowers in clusters at top of stem (July–September).
- Found in acid bogs, wet heathland and moorland.
- Cross-Leaved Heath is one of the plants that is used to help restore areas damaged by erosion. These plants will help to continually enhance the biodiversity of the moor thanks to their ability to stabilise peat effectively in different situations, and provide a natural cover of flora which is important to a wide range of wildlife.
- Heather seed is applied as part of bare peat restoration, as it helps to stabilise and restore large areas of damaged moorland.



BELL HEATHER

Erica cinerea

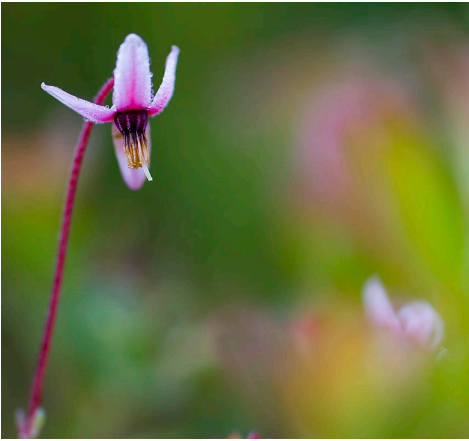
- A low, spreading shrub growing to 15–60cm tall, with fine needle-like leaves 4–8mm long arranged in whorls of three.
- Bunches of leaves at points up the stem.
- The flowers are bell-shaped and pink-purple (July–September).
- Heather seed is applied as part of bare peat restoration, as it helps to stabilise and restore large areas of damaged moorland.



BOG ROSEMARY

Andromeda polifolia

- Dwarf evergreen shrub which reaches 35cm in height. Uncommon.
- Leaves are alternate, dark green above and glaucous below, and curled over along the edges.
- Flowers are globe-shaped and a delicate rosy-pink to white (May–September).



CRANBERRY

Vaccinium oxycoccos

- Cranberry is a prostrate, trailing perennial with long wiry or threadlike stems. It has small alternate and widely spaced leathery leaves which are dark green above and paler below.
- Pretty pink flowers (June–August) and produces small edible red fruit. Often found creeping over sphagnum moss.



COWBERRY

Vaccinium vitis-idea

- A low growing (to 30cm) evergreen shrub with numerous branches of dark green, oval leaves which are pale below.
- Flowers (June–August) and produces edible round red berries.



BILBERRY

Vaccinium myrtillus

- Low growing shrub which bears edible dark blue/purple fruit. Fruit is similar to the (American) blueberry.
- Stems are essentially triangular in cross section and are fluted often twisted.
- The finely toothed leaves are a deep green during summer turning yellow and then red in autumn.
- Bilberry is one of the plants that is used to help restore areas damaged by erosion. These plants will help to continually enhance the biodiversity of the moor thanks to their ability to stabilise peat effectively in different situations, and provide a natural cover of flora which is important to a wide range of wildlife.



HEATH BEDSTRAW

Galium saxatile

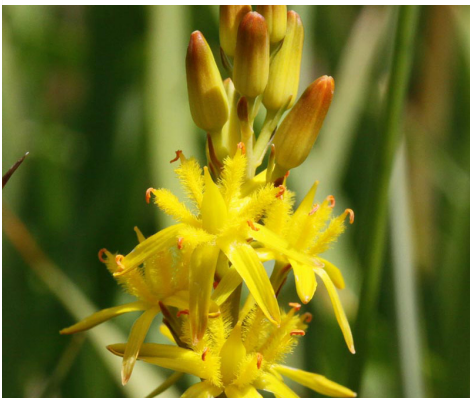
- Often a very common herb on acidic heaths and moors.
- Flowers are small (typically 2–4mm across) and white in colour (June–August).
- Leaves arranged in a whorl of 6–8 leaflets around the smooth, square stem. Each leaflet ends in a small point.
- Can form compact cushions or mats. Prefers to grow along the ground although flower stems may be ascending.



MARSH PENNYWORT

Hydrocotyle vulgaris

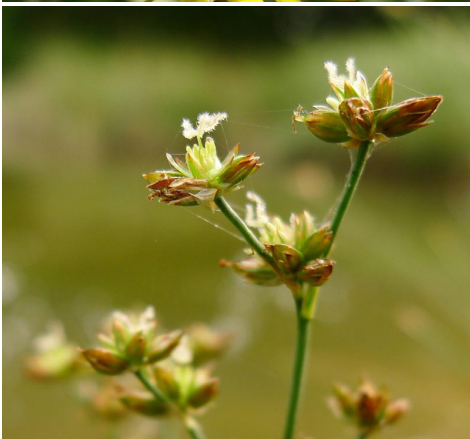
- Creeping perennial with circular, gently scalloped leaves held upright like parasols.
- Found in damp areas such as rushy flushes and pond margins - but always rooted in the ground.
- Has tiny flowers (1mm across).



BOG ASPHODEL

Narthecium ossifragum

- Bright yellow, star-like flowers which are borne on pyramidal spikes (June–August). Can grow between 10–40cm tall. They set fruit in autumn when the flower spikes turn deep orange.
- The leaves are flattened often forming a fan around the stem.



JOINTED RUSH

Juncus articulatus

- A common perennial of wet acid habitats. May grow along the ground or upwards. Stems reach 80cm in length.
- As its name suggests it has joints in its leaves (but this is not diagnostic since other rush species also share this feature) with near-vertical branches and generally flatter leaves.



SHARP-FLOWERED RUSH

Juncus acutiflorus

- Very similar to Jointed Rush but growth habit is always erect (never prostrate) and taller (to 100cm) with main branches almost horizontal and round leaves. Common on wet acid soils.



BULBOUS RUSH

Juncus bulbosus

- As the name suggests this small rush (30cm) tends to have a bulbous base.
- It has hollow leaves (3–12cm) and simple (one stalk per flower) or branched flowers that are sometimes replaced by green plantlets (see photo gallery). These are capable of establishing a new plant of their own. A creeping plant.



HEATH RUSH

Juncus squarrosus

- The leaves of this wiry rush are basal (grow out from the point that the stem leaves the ground), deeply grooved and are up to 15cm in length. They are strongly reflexed (folded down the middle, spreading in a flat rosette).
- The flowering stems grow to 50cm. Flowers June–July and the large fruit-capsules (for its size) have pale edges to the tepals giving a stripey effect.



SOFT RUSH

Juncus effusus

- A tall rush (to 130cm) which is densely tufted and grows straight up. Forms dense stands.
- The stems are smooth cylinders that contain a continuous foam-like pith (once used as candle wick).
- The flowers, which erupt from the stem towards the top, may be quite loose or in a dense clump (June–August).
- Found on many soil types but prefers damp grasslands and bogs (always poorly drained soils).



COMMON COTTONGRASS

Eriophorum angustifolium

- This is actually another sedge species which generally grows 20–50cm tall. It is most conspicuous and easy to identify when the fruit (fluffy white seed heads) are produced in June–September.
- A plant of bogs (especially sphagnum bogs) and wet heaths. Taller and with more unkempt “seed heads” than hare’s-tail cottongrass it also produces multiple heads per stem (where hare’s-tail produces only one terminal flower/seed head).
- Common cottongrass is one of the plants that is used to help restore areas damaged by erosion. These plants will help continually enhance the biodiversity of the moor thanks to their ability to stabilise peat effectively in different situations, and provide a natural cover of flora which is important to a wide range of wildlife.



HARE’S-TAIL COTTONGRASS

Eriophorum vaginatum

- This is actually another sedge species which can form tussocks up to 50cm tall. It is most conspicuous and easy to identify when the fruit (fluffy white seed heads) are produced in May–June. These are solitary (one per stem), terminal and resemble a hare or rabbit’s tail.
- A plant of bogs, moorland and wet heaths. The similar common cottongrass is taller and with more unkempt “seed heads” than hare’s-tail cottongrass. It also produces multiple heads per stem.
- Hare’s-tail cottongrass is planted to help restore areas of peatland damaged by erosion. These plants will help continually enhance the biodiversity of the moor thanks to their ability to stabilise peat effectively in different situations, and provide a natural cover of flora which is important to a wide range of wildlife.



DEER-SEDGE

Trichophorum cespitosum

- Small, neat looking sedge (to 35cm) producing dense growth of smooth stems which are vibrant green and topped with a terminal brown flower. Growth form resembles a bottle-brush. There is a tiny leaf at the base of each stem.



STAR SEDGE

Carex echinata

- A densely tufted sedge which grows 10–40cm in height. Found in bogs and acid wet heathland. Distinctive, star-shaped fruit.



GLAUCOUS SEDGE

Carex flacca

- As the name suggests this sedge has a distinct blue-green colour particularly the under surface of the leaf. It can spread via rhizomes and has a creeping habit. Grows to 60cm.
- Flowers May–June and fruits July–August.



CARNATION SEDGE

Carex panicea

- A glaucous (blue-grey) sedge growing up to 60cm in height.
- When in flower it has one cigar shaped, purple-brown male flower at the top of the stem and 1–3 female flowers below.
- Fruits are 3–4mm long and oval.



COMMON YELLOW-SEDGE

Carex viridula

- A small (5–30cm tall) densely tufted sedge with yellow-green leaves which are keeled (folded down the middle).
- Flowers - one terminal male flower spike (brown) which continues in line with stem (see photo gallery). 2–4 female flowers which are oval in shape and form into distinctive fruiting bodies (June–Sept).



MAT-GRASS

Nardus stricta

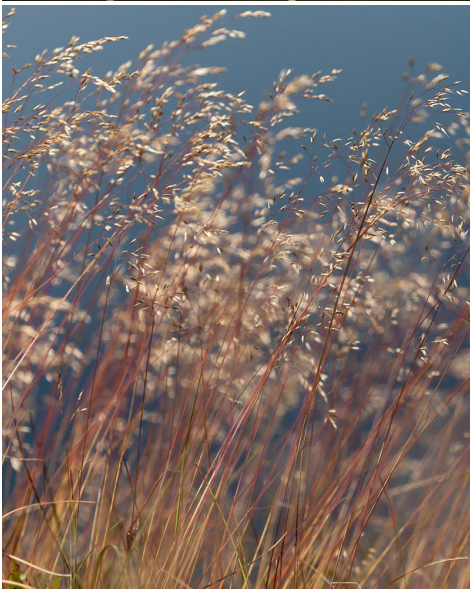
- Tufted grass which can form dense tussocks.
- Stems to 40cm with leaves being tightly rolled and quite stiff.
- Flowers (June–August) are one-sided spikes.
- Found on acid soils including moorland and hill grasslands where it prefers well-grazed areas.



SHEEP'S FESCUE

Festuca ovina

- A tufted greyish-green grass with fine, bristle-like small leaves (3–15cm).
- This widespread grass species is found in a variety of upland habitats. It is abundant on calcareous soils and is less common on heather moorlands. On some heather moors it is found temporarily where work is undertaken to stabilise bare peat (lime, grass seed and fertiliser are applied to reduce acidity and form an initial crop of grass).
- Flowers May–June.



WAVY HAIR-GRASS

Deschampsia flexuosa

- Tussock forming grass which has very fine, shiny, mid-green leaves to 20cm but flower spikes to 100cm.
- The open, hair-like flower heads create a shimmering pinkish haze over the leaves and when in seed fade to a more buff colour.
- The seed of wavy hair-grass is applied as part of peatland restoration programmes, helping to stabilise and restore large areas of damaged moorland.



YORKSHIRE FOG

Holcus lanatus

- A very common grass which can grow to 100cm in height. It produces a large amount of seed and is a rapid coloniser of disturbed ground.
- Leaves are a grey-green colour with visible soft, downy hairs.
- Flowers are loose, soft panicles often creating a silvery-pink haze when open. Before unfurling flowers are strongly tinged with pink.
- This grass tends to stand out against others due to its grey-green colour.
- Flowers May–September.



COMMON BENT

Agrostis capillaris

- A relatively fine-leaved grass with leaves tapering evenly from the stem to the point. The finely branched, delicate looking flower head becomes evident from May to June and forms a reddish-purple haze over the leaves.
- Dead flower heads may persist well into the autumn.



PURPLE MOOR-GRASS

Molinia caerulea

- A very variable tussock-forming grass. Often tall (to 130cm). Can become dominant and form tall, dense, tufted tussocks.
- Ligules (where leaf meets stem) have a ring of hairs around them.
- Flowers and leaves purple tinged (July–September). Leaves are straw coloured in winter.
- Purple moor-grass can be a problem on the moors as it is can dominate and become invasive (this is where it starts to become so dominant that it affects the ecological balance of the moor).

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

