

Welcome to the Moors for the Future Partnership's guide to the characteristic moorland plants of the Peak District National Park and South Pennines.

Use this guide to try your hand at spotting and identifying some of the many beautiful and fascinating plants that help to make these moorlands such important and unique places.

If you have a smartphone search for MoorPLANTS on the Apple and Android app stores to find our interactive version of this field guide.

## Fern-like

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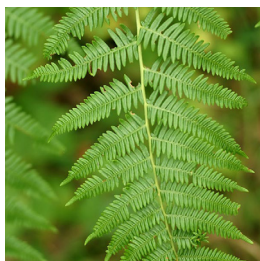


### Fir Clubmoss

*Huperzia selago*

Moorland specialist

- 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*

Moorland specialist

- 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*

Moorland specialist

- 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.
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## Fern-like

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### Hard-Fern

*Blechnum spicant*

Moorland specialist

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*

Moorland specialist

- 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.

## Flowering herb

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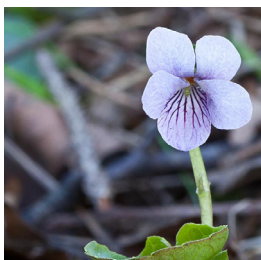


### Tormentil

*Potentilla erecta*

Moorland specialist

- 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.



### Marsh Violet

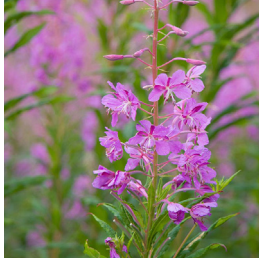
*Viola palustris*

Moorland specialist

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

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### Rosebay Willowherb

*Chamerion angustifolium*

Coloniser

- 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*

Coloniser

- 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*

Moorland specialist

- 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*

Coloniser

- 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.



### Heath Bedstraw

*Galium saxatile*

Moorland specialist

- 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.
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## Flowering herb

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### Marsh Pennywort

*Hydrocotyle vulgaris*

Moorland specialist

- 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

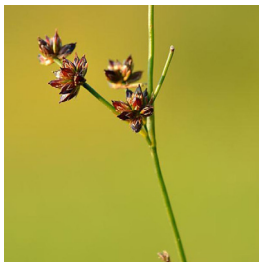
*Narthecium ossifragum*

Moorland specialist

- 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.

## Grass-like

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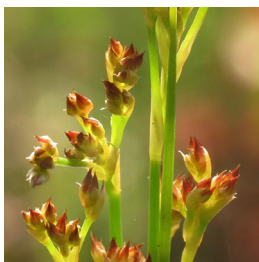


### Jointed Rush

*Juncus articulatus*

Moorland specialist

- 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.

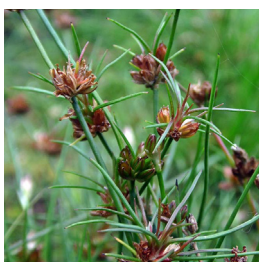


### Sharp-Flowered Rush

*Juncus acutiflorus*

Moorland specialist

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*

Moorland specialist

- 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. These are capable of establishing a new plant of their own. A creeping plant.

## Grass-like

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### Heath Rush

*Juncus squarrosus*

Moorland specialist

- 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.
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### Soft Rush

*Juncus effusus*

Moorland specialist

- 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).
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### Common Cottongrass

*Eriophorum angustifolium*

Moorland specialist

- 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 the Moors for the Future Partnership use to help restore areas damaged by erosion. Over 190,000 individual plants of 6 species, including common cottongrass, were propagated from specimens found in the Dark Peak SSSI and then planted out. Chosen for 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, these plants will help to continually enhance the biodiversity of the moors.
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## Grass-like

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### Hare's-tail Cottongrass

*Eriophorum vaginatum*

Moorland specialist

- 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 one of the plants that the Moors for the Future Partnership use to help restore areas damaged by erosion. Over 190,000 individual plants of 6 species, including hare's-tail cottongrass, were propagated from specimens found in the Dark Peak SSSI and then planted out. Chosen for 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, these plants will help to continually enhance the biodiversity of the moors.



### Deer-Sedge

*Trichophorum cespitosum*

Moorland specialist

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*

Moorland specialist

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*

Moorland specialist

- 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.

## Grass-like

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### Carnation Sedge

*Carex panicea*

Moorland specialist

- 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*

Moorland specialist

- 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. 2-4 female flowers which are oval in shape and form into distinctive fruiting bodies (June-Sept).



### Mat-Grass

*Nardus stricta*

Moorland specialist

- 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*

Moorland specialist

- 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.
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## Wavy Hair-Grass

*Deschampsia flexuosa*

Moorland specialist

- 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 the Moors for the Future Partnership's aerial seed application programme which is helping to stabilise and restore large areas of damaged moorland.



## Yorkshire Fog

*Holcus lanatus*

Moorland specialist

- 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.

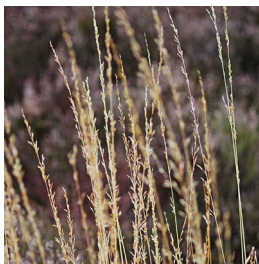


## Common Bent

*Agrostis capillaris*

Moorland specialist

- 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*

Moorland specialist

- 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 can dominate and become invasive (this is where it starts to become so dominant that it affects the ecological balance of the moor).
  - It has traditionally been dealt with by a combination of burning, poisoning and flailing followed by possible repeat cycles of these and then a final bout of heather seed spreading. However, a new project managed by the Moors for the Future Partnership for Natural England and Yorkshire Water is investigating a less destructive method for reducing the dominance of this plant using flailing alone followed by the application of *Sphagnum* beads.
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# Shrub/Tree

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## Gorse

*Ulex europaeus*

Moorland specialist

- 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*

Moorland specialist

- 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 the Moors for the Future Partnership uses to help restore areas damaged by erosion. Over 190,000 individual plants of 6 species, including cloudberry, were propagated from specimens found in the Dark Peak SSSI and then planted out. Chosen for 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, these plants will help to continually enhance the biodiversity of the moors.



## Birch

*Betula spp*

Coloniser

- 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*

Coloniser

- 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.
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## Shrub/Tree

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### Crowberry

*Empetrum nigrum*

Moorland specialist

- 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 the Moors for the Future Partnership use to help restore areas damaged by erosion. Over 190,000 individual plants of 6 species, including crowberry, were propagated from specimens found in the Dark Peak SSSI and then planted out. Chosen for 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, these plants will help to continually enhance the biodiversity of the moors.



### Rhododendron

*Rhododendron spp.*

Coloniser

- 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*

Moorland specialist

- 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 the Moors for the Future Partnership's "brash works" and aerial seed application programme which is helping to stabilise and restore large areas of damaged moorland.
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### Cross-Leaved Heath

*Erica tetralix*

Moorland specialist

- 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 the Moors for the Future Partnership uses to help restore areas damaged by erosion. Over 190,000 individual plants of 6 species, including cross-leaved heath, were propagated from specimens found in the Dark Peak SSSI and then planted out. Chosen for 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, these plants will help to continually enhance the biodiversity of the moors.
- Heather seed is applied as part of the Moors for the Future Partnership's "brash works" and aerial seed application programme which is helping to stabilise and restore large areas of damaged moorland.



### Bell Heather

*Erica cinerea*

Moorland specialist

- 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 the Moors for the Future Partnership's "brash works" and aerial seed application programme which is helping to stabilise and restore large areas of damaged moorland.

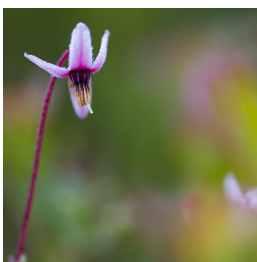


### Bog Rosemary

*Andromeda polifolia*

Moorland specialist

- 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*

Moorland specialist

- 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.
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## Shrub/Tree

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### Cowberry

*Vaccinium vitis-idea*

Moorland specialist

- 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*

Moorland specialist

- 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 the Moors for the Future Partnership use to help restore areas damaged by erosion. Over 190,000 individual plants of 6 species, including bilberry, were propagated from specimens found in the Dark Peak SSSI and then planted out. Chosen for 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, these plants will help to continually enhance the biodiversity of the moors.
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# Moors for the Future Partnership

Since 2003, the 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 £5.5 million EU LIFE+ MoorLIFE project is a key part of the initiative. Its primary objective is to restore habitats of European significance – protecting active blanket bog by restoring bare and eroding peat. In just five years, more than 2,000 acres of Peak District and South Pennine moorland has been restored.



Photo showing cottongrass plugs being planted out

© Moors for the Future Partnership

The project has key benefits for communities on both sides of the Pennines in terms of improved landscape, water quality and diversity of upland fauna and flora. The blanket bogs are home to many important birds including the endangered twite, curlew and golden plover. Peat-forming Sphagnum moss, which has 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.



Photo showing healthy blanket bog

© Tim Melling

The MoorLIFE Project was funded by the EU Life+ programme, led by the Peak District National Park Authority and delivered by the Moors for the Future Partnership. Partners: Environment Agency, Natural England, National Trust, United Utilities, Yorkshire Water.

Find out more at [www.moorsforthefuture.org.uk](http://www.moorsforthefuture.org.uk)

