



National Plant Monitoring Scheme

Online Training Materials 8: Lowland Grassland Habitats: Week 1 Introduction to Key Species of Dry Acid Grassland and Heathland

Produced by Dominic Price for the NPMS, June 2020

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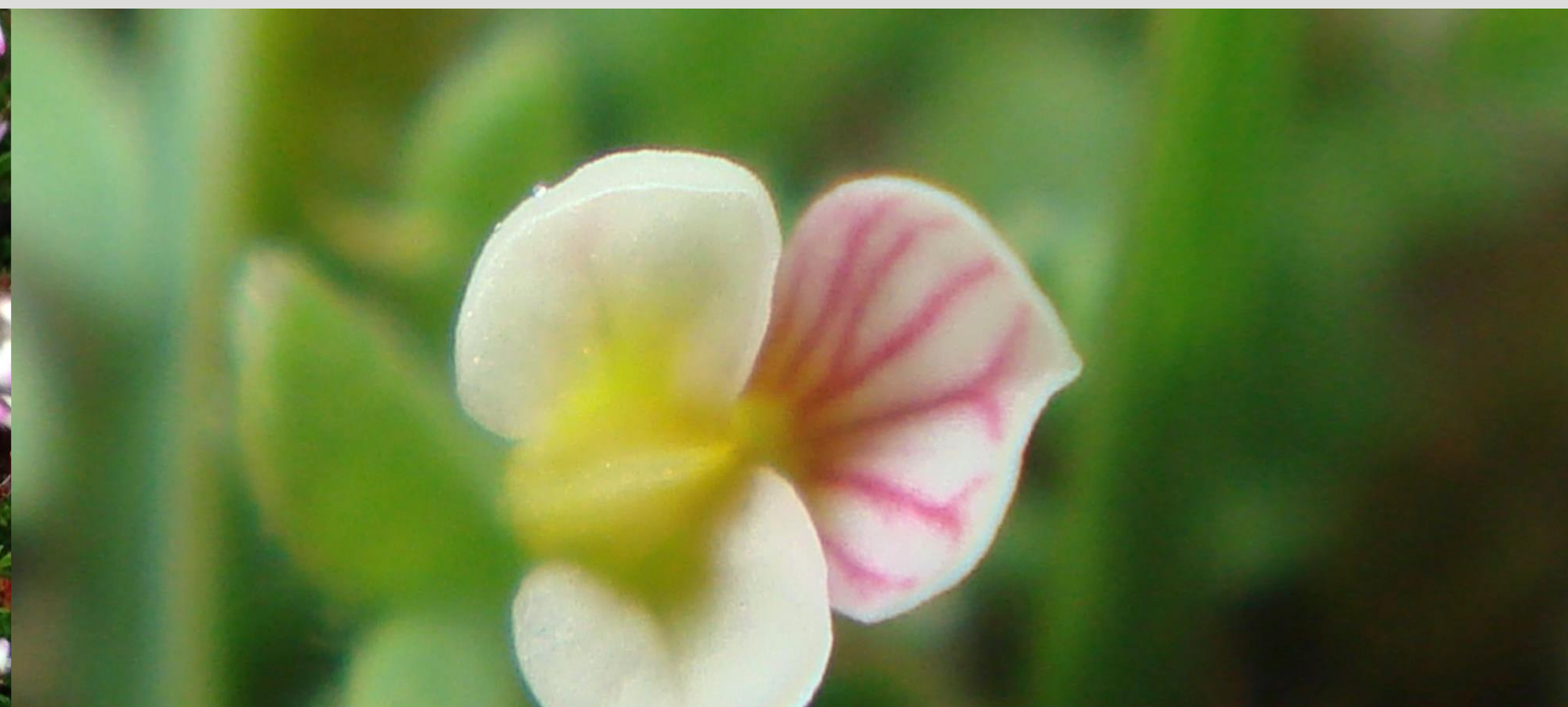


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Heathlands and Dry Acid Grassland are amongst some of the most endangered habitats in the UK, existing only as a fragment of their former glory. Despite their beauty they are tough environments for plants to live in, and the plants that exist within in them have had to adapt to cope with a range of ecological stresses.

In this document we will outline some of the key species that you can find in them, with helpful hints for their identification.



Grasses

Agrostis capillaris Common Bent

- 'Tickle grass' - very delicate feathery flowers on long stems which stay open even after dieback
- Small ligule - 'cleric's collar', wider than long
- Spear-like leaves

Can be muddled with Meadow-grass (*Poa*) which has more clumpy flowers, and a keeled leaf.

Creeping Bent (*A. stolonifera*) has a long creepy ligule and the flower closes up when it goes to seed.





Anthoxanthum odoratum

Sweet Vernal Grass

- Auricle fringed with whisker-like hairs
- Roots have disinfectant/almond smell
- Short leaves, glossy beneath
- Flowers are short spikes, early in the year



Carex binervis Green-ribbed Sedge

- One of the few medium-sized sedges of acid habitats, it can be easily spotted with its deep green shiny leaves, which become dark brown and rusty with age.
- You can see a single green 'rib' running up the back of each seed, giving the species its name.



Carex flacca Glaucous Sedge

- Easy to spot with its grey-blue rosettes.
- If you fold a leaf onto itself you'll notice the underside is much more glaucous than the top, which helps to separate it from similar species.
- Forms very black flowerhead

In damper ground you can find another glaucous looking sedge, this is Carnation Sedge (*Carex panicea*) which has leaves which are equally grey on both sides, and fewer fruits looking like swollen chocolate limes.



Carex pilulifera Pill Sedge

- The only pale yellow sedge found in dry acid habitats.
- The flowers form lying down on the ground, both to help spread seeds and avoid being grazed
- If you feel the stem it is smooth almost all the way, becoming rough in the last cm beneath the flower



***Danthonia decumbens* Heath-grass**

- A rather grey looking grass, with pointing spearlike leaves sticking out sideways
- Very unique flowerheads, with c. 5 hard nutlike flower buds/seeds
- The junction of the leaf and the stem has long straggly hairs sticking out, looking like nasal hairs.

Potentially confusable with *Agrostis* due to the spearlike leaves, but these are much more rigid and grey, and *Agrostis* lacks hairs on the stem.



Deschampsia flexuosa Wavy Hair-grass

- A wonderfully showy plant of dry heaths, unmistakable in flower with its wavy heads (which both wave in the wind, and have wavy crinkled stems)
- In leaf it is one of many needle-like species of heath, but with experience can be separated due to its waxy-smooth feel and lack of ligule



Molinia caerulea Purple Moor-grass

- Our only true deciduous grass, meaning it dies back in the winter leaving great piles of dead material, which can pose a huge fire risk in ungrazed heathlands
- Smaller plants have a slight purple hue to leaves, and if you pull the leaf away from the stem you can see a 'ring of hairs' surrounding the stem
- Generally indicative of damp heath, but good at spreading into dry heath, especially where the grazing is too low



***Nardus stricta* Mat-grass**

- Very tough needly grass, if you rub your hand over a patch of it it feels like a doormat
- About half the leaves stick out horizontally, which means it can survive grazing, and can become hugely dominant on sheep-grazed moorland
- The flowers resemble sharp black whips



Luzula multiflora Heath Wood-rush

- In leaf it looks more like a grass than rush, but has extraordinarily hairy leaves
- Larger than the more common Field Wood-rush, and has multiple flowerhead (although confusingly a heathland subspecies exists which only has one compact head)
- In grazed habitats look for small rosettes covered in straggly white hairs



Forbs - Heathers

Calluna vulgaris

Heather

The most widespread of the heathers, with tiny pink purple flowers (but capable of turning whole mountain ranges purple due to the amount of plants!)

The leaves are made up of tightly-bound clusters of coniferous looking scales.

The most tolerant of heathers, growing on a wide range of heathlands, from dry to wet.



***Erica cinerea* Bell Heather**

This is the heather of dry heathlands and moors, flowering earlier than *Calluna*.

The leaves are still clustered, but much more needle-like. The flowers are also much larger than *Calluna*, with each one resembling the shape of a bell.



***Erica tetralix* Cross-leaved Heath**

This is the heather found in wet soils, even growing on top of bed of Sphagnum in mires.

Overall it has a grey appearance, (which can lead to a muddle with the latin name of Bell Heather). The leaves are needle-like, but arranged in tidy whorls of four. The flowers are much bigger, and all occur at the end of the stem.

With a hand lens you can see that it is covered in minute gland-tipped hairs, to deter insects from eating it.

In Dorset and Cornwall keep an eye out for Dorset and Cornish Heaths, which resemble this species!

Forbs - Pea Family

Cytisus scoparius Broom

From a distance this shrub looks superficially like Gorse with its big yellow pea flowers, however the flowers tend to droop down on long stems, and most crucially it lacks spines, and has much gentler small waxy leaves.





***Lotus corniculatus* Common Bird's-foot-trefoil**

A common site on both heaths and acid grassland. Look for a 'trefoil' of clover-like leaves, but with pointier tips.

The flowers can have a reddy-brown tinge when in bud, and once they have gone to seed you will see the three clawed 'bird's-foot'

In damper ground keep an eye out for Greater Bird's-foot-trefoil, which is larger, harrier and has a hollow stem.



Ornithopus perpusillus Bird's-foot

It's hard to stress just how teeny this plant can be - possibly one of our smallest plants when it grows on grazed acid grassland.

What it lacks in size it makes up for in looks, with a truly spectacular flowers (that photo is about x20!) and a very cool segmented pod, which you can see at the bottom of the photo.

In ungrazed and shaded environments it can get larger, but generally favours dry sandy soils, both on heaths and in dunes.



***Ulex europaeus* Gorse**

This the biggest of our native gorses, and the only one likely to form shrubs which are taller than you.

For smaller specimens you may have to separate them from the two on the next page, in which case look to check the spines are ridged. The spines are also up to 2.5cm long, which is almost double the other gorses.





Ulex gallii **Western Gorse**

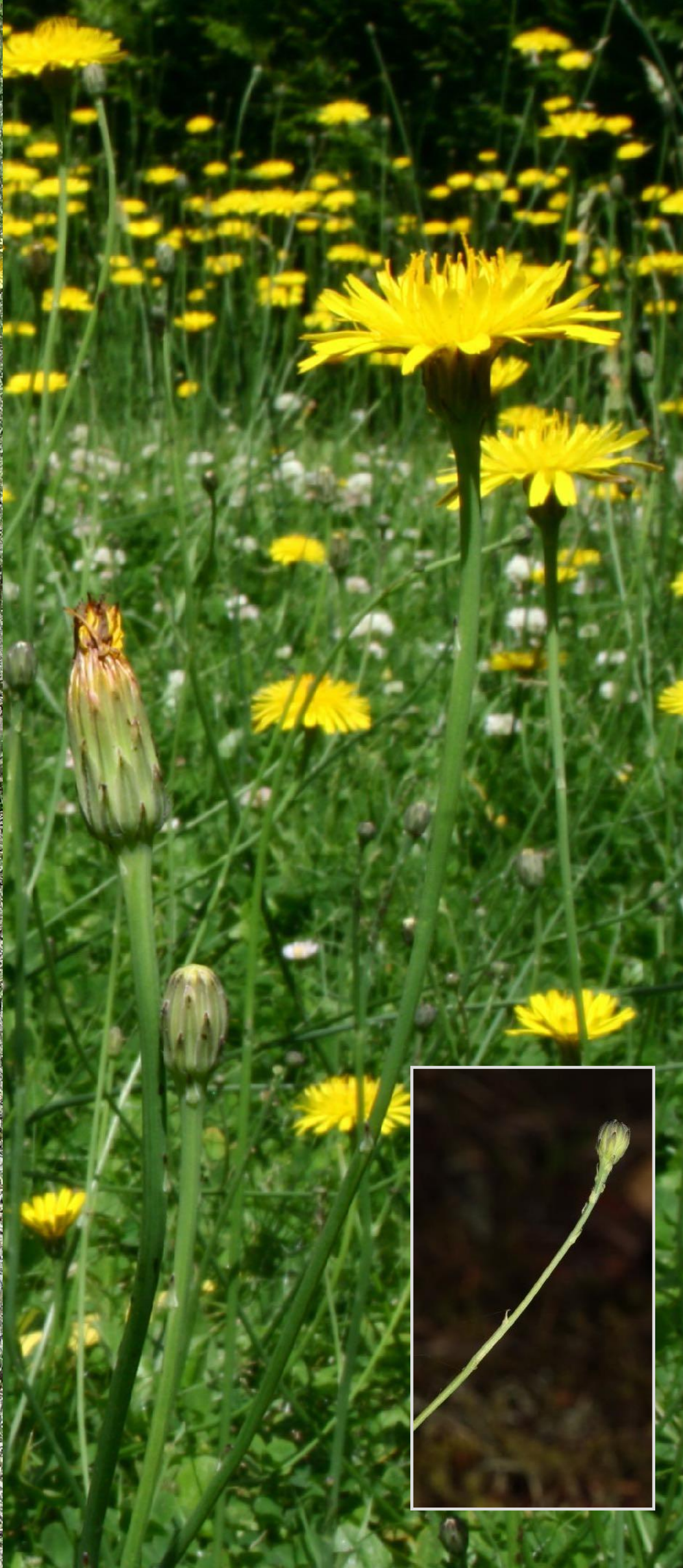
This species forms something of an intermediate between Common and Dwarf. It's spiny, but smaller than Common. Many guide books talk about differences in the flower structure, but in reality these are hard to elucidate. The good news is that if you're in the eastern half of the country you'll probably never see it!



Ulex minor **Dwarf Gorse**

The smallest of the gorses, with needles that are still sharp but only faintly ridged and rarely over 1cm long.

If you find a young shoot it will be soft enough to stroke, which also separates it from the other two.



Forbs - Daisy Family

Hypochaeris radicata Common Cat's-ear

One of the slightly challenging group of yellow composites - look for three things;

1. Small black-tipped flaps on stem, sort of looking like cat's-ears (with a bit of willing suspension of disbelief)
2. If you pick a leaf at its base it will come off with up to three filaments extruding from it.
3. Hairs on leaves unforked (it can be hairy or not, depending on what mood it's in)



Pilosella officinarum **Mouse-ear Hawkweed**

It is relatively easy to spot this in flower, if it is growing with other yellow composites, as it has a distinctive sulphur-yellow colour to the flowers.

In leaf there's nothing to confuse it with, with the leaves literally looking like mouse's-ears, covered in a long straggly white hairs, and an unusually white underside to the leaves.



Forbs - All the rest

Cuscuta epithymum

Dodder

Unmistakably weird plant, looking like something out of War of the Worlds. Dodder is parasitic on heathers and gorses, and while it doesn't outright kill them, they're probably not too happy about being swamped by it!

Look out for the strange white globular flowers, which straddle the threadlike stems



Galium saxatile Heath Bedstraw

The only bedstraw you are likely to encounter on high quality heath and acid grasslands, it is much smaller than the closely related Hedge Bedstraw.

In grazed habitats it can have a limited amount of flowering material, and may simply exist as whorls of leaves within the sward.



***Polygala serpyllifolia* Heath Milkwort**

Showy and unusual blue flowers, with a raggedy lower petals almost looking like tentacles. Other colours are available, but generally Heath Milkwort is more true to the blue than the other species which commonly show pink and white forms.

To check you don't have Common Milkwort find the leaves at the bottom of the stem and check to see if they are opposite (in Common they are alternate).



***Potentilla erecta* Tormentil**

In acid grassland and heath where one almost gives up on finding anything apart from grasses and heather, Tormentil is the one flower you are likely to come across!

It is a member of the Rose family, and thus has a rather blossom-like flower with delicate petals. Despite the latin name it can often be quite sprawling, but always with toothy leaves.

True forms always have four petals, but on more disturbed heaths it can hybridise with Creeping Cinquefoil to form a five-petalled form.



***Prunella vulgaris* Selfheal**

A typical member of the mint family (*Lamiaceae*) this plants has square stems, opposite leaves and flowers with strong lips.

It grows on a wide range of habitats, but can thrive on acid soils where the grazing is not too heavy.



***Rumex acetosella* Sheep's Sorrel**

A tiny member of the Dock family, in extreme environments plants can be less than 1cm tall, and in periods of drought can turn huge swathes of ground a deep red colour.

The leaves have two very pointed bases, sometimes curling right around, which helps separate it from Common Sorrel, which has lobes at the bases rather than spears.



***Vaccinium myrtillus* Bilberry**

Despite being a semi-woody shrub this species retains chlorophyll in its four-angled stems, giving them an unusual green appearance in the winter months. The leaves are toothed, and can have a strong red hue in younger specimens.

The berries become harder to find on sites in the south of England, but are a welcome snack in more northern and mountainous populations.





***Veronica officinalis* Heath Speedwell**

The flowers on this species are much paler than the ones you may be used to on Germander Speedwell, but nonetheless have the distinctive double stamen and single stigma of the genus.

The toothed leaves can be very sprawling, and are frequently encountered with no flowers on.



***Viola riviniana* Common Dog-violet**

A common site in a wide range of habitats, this is the most common violet found in heathland. The leaves are relatively rounded, and if they appear more pointed there is a chance you have found the rare Heath Dog-violet.

In other habitats it is useful to be able to separate this species from Early Dog-violet, which has purple spurs sticking out the back of the flowers (think Early=Purple, like the orchid)

Quiz time

15 Questions to see how much you've taken in!

The following slides have a series of species pictured for you to try to identify.
The answers to each slide can be found on each following page.



Deschampsia flexuosa Wavy Hair-grass



Nardus stricta Mat-grass



One species, tussock and closeup of ligule



Molinia caerulea Purple Moor-grass



One species, tussock and closeup of inflorescence



Carex binervis Green-ribbed Sedge





Calluna vulgaris Heather



Cuscuta epithymum Dodder





Cytisus scoparius Broom



Hypochaeris radicata Common Cat's-ear





Polygala serpyllifolia Heath Milkwort



Rumex acetosella Sheep's Sorrel







Veronica officinalis Heath Speedwell



Viola riviniana Common Dog-violet





Erica tetralix Cross-leaved Heath



Erica cinerea Bell Heather

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