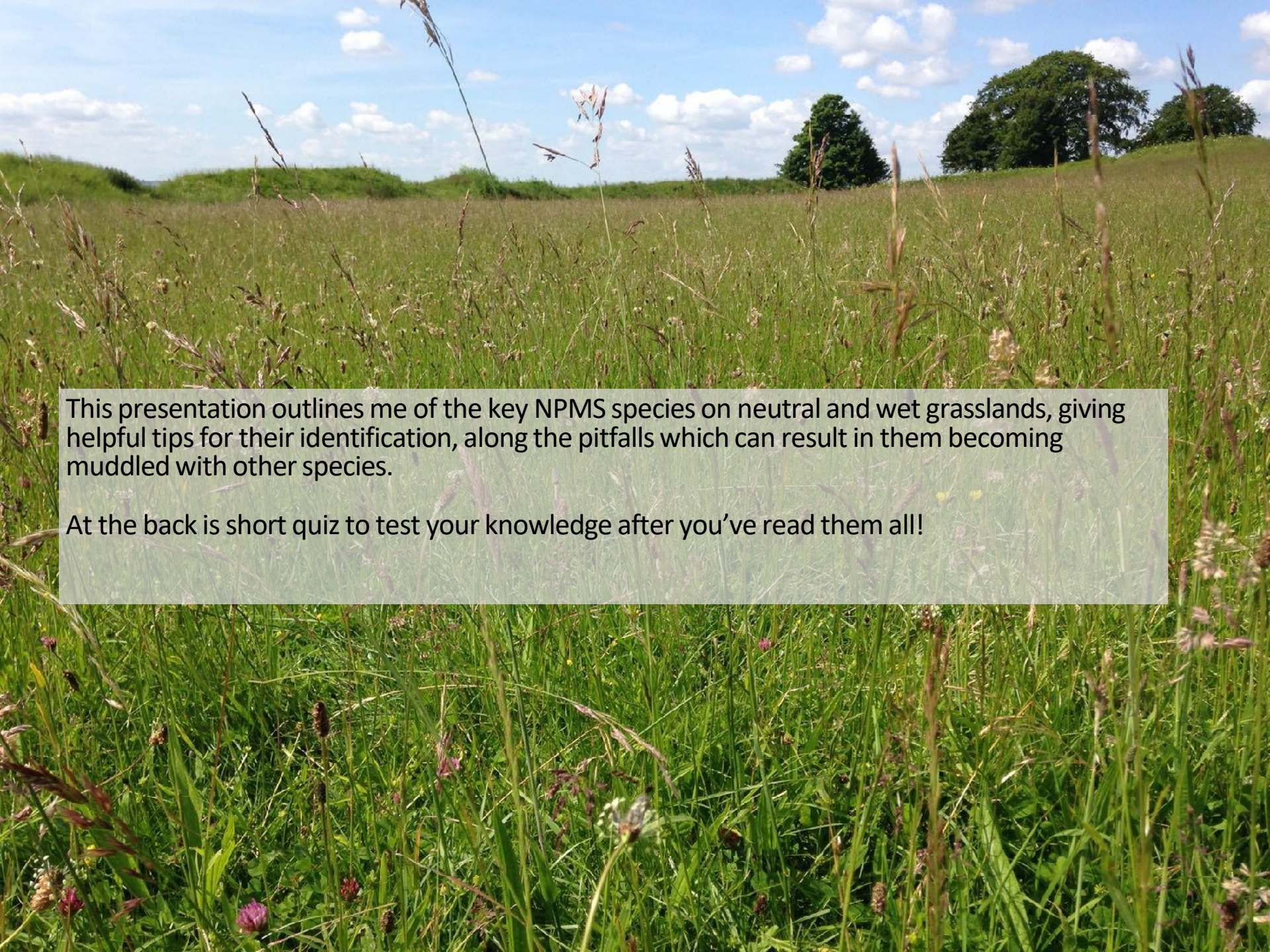
National Plant Monitoring Scheme

Online Training Materials:
Key Species of Neutral and Wet Grasslands

Dominic Price



This presentation outlines me of the key NPMS species on neutral and wet grasslands, giving helpful tips for their identification, along the pitfalls which can result in them becoming muddled with other species.

At the back is short quiz to test your knowledge after you've read them all!

Neutral And Wet Grasslands

Key Characters - neutral

- Moist conditions on deep clay and loam
- Rich and tall swards
- No one species dominant
- Heavily managed

Neutral And Wet Grasslands

Status

- Throughout lowland Britain
- 97% lost since 1935

Neutral And Wet Grasslands

Key Characters - wet

- Very rich swards
- Often stand of rushes
- Can be ‘weedy’
- Diversity typically found in inundated areas

Grasses

Alopecurus geniculatus Marsh Foxtail

One of the ‘microphone head’ grasses. It can be separated from the Cat’s-tail grasses (*Phleum*) by the fact each bit of the inflorescence has a single awn sticking up from it, rather than two (devil’s horns) in the latter (pictured below).

It has a much narrower head than Meadow Foxtail, an overall glaucous appearance, and can be found bending down on one knee once you inspect the ground.

Cat’s-tail (*Phleum*)

NEUTRAL DAMP

Deschampsia cespitosa Tufted Hair-grass

Forming dense dark green tussocks and a spectacular late-summer sprawl of flowers there are not many grasses you can muddle this up with.

When specimens are younger the delicate heads can look rather like an *Agrostis*, in which case have a feel of the leaves. Rubbed from base to tip they feel pretty average, but rub them the other way (with care) and you will be struck by the incredible barbs.

In winter they can look a bit straggly with many of last year's dead leaves hanging on to the tussock.

Indicative of slightly damp ground, this grass can be found in damp meadows and woodland edges.

DAMP

Holcus lanatus Yorkshire-fog

A delightful grass that can be found in virtually every UK habitat. In large quantities it can suggest abandonment, as it is kept down by regular grazing and hay cutting.

The flowerheads start off pink and closed, before opening to form cream through to white soft heads (slightly more clumpy looking than *Agrostis* or *Poa*).

If you stroke the leaves and stems you will be struck by their wonderful velvet texture, due to a layer of tiny fine hairs. The best diagnostic is the 'stripy pyjamas' at the stem base, best seen on fresh new stems before they flower. Plenty of grasses have red steaks at the base, but nothing has these delicate fine pink lines.

NEUTRAL DAMP

Rushes

Juncus conglomeratus Compact Rush

When not in flower this rush sits somewhere between Soft and Hard rush (see next page) in being slightly ridged, and somewhere between a glossy and matt finish. Inside the stems the pith is more or less continuous, like Soft rush.

As soon as the flowers appear they are unmistakable, looking like brown tennis balls stuck on the sides of the stem.

As the plants get older the stems start to twist, sometime forming ornate corkscrew shapes.

A common sight on both neutral and acidic damp ground.

NEUTRAL DAMP

Juncus effusus Soft Rush

Look for three features on this rush

1. Plump stems with a glossy deep green colour. Easy to pull into two.

2. Continuous pith (i.e. if you open up the stem you'll see a uniform white sponginess)

3.Inflorescences which are slightly open (more open than Compact Rush, less open than Hard Rush)

If you open up a stem and run your thumbnail up it, it's quite easy to remove the inner material, but many people consider this to be simply t*aking the pith.*

NEUTRAL DAMP

Juncus inflexus Hard Rush

Three features to look for in this rush:

1. Thin stems, with a matt finish. Heavily ridged throughout with an almost grey-blue colour. Very hard to pull into two.

2. Inside the stem the pith is ‘interrupted’, that is to say very gappy.

3. The inflorescences are very open, like a shower of flowers pouring out.

This generally favours damper ground than Soft Rush, but this is usually contradicted as soon as you go out and find Soft Rush standing in a pool of water

NEUTRAL DAMP

Forbs

Caltha palustris Marsh-marigold

In flower this is by far the largest member of the Buttercup family, with bold shiny inflorescences, which then form large seedheads.

The leaves are large and kidney-shaped and persist until the winter.

Often found as an aquatic plant on pond and river edges, it also fairs well in good quality damp meadows, especially water meadows bordered by rivers which transport the seeds.

DAMP

Cardamine pratensis
Cuckooflower

This is arguable the most exotic member of the Cabbage family, which is not a taxon renowned for its showy flowers.

Forming delicate spikes of well-spaced pink flowers in April and May, the leaves which consist of several rounded leaflets, can be found all summer.

Along with Garlic Mustard it is the favoured food plant of the Orange Tip butterfly, which lays a single orange egg just below the flowers; well worth looking out for from mid-April to mid-May.

DAMP

Carduus nutans Musk Thistle

Possibly the most thistly thistle we have, this spiny member of the daisy family forms very showy flower heads. They droop downwards when fully developed (and some older books refer to it as Nodding Thistle), and have rather intimidating long purple-tinged bracts around the flower.

Fully grown plants can reach over a meter and a single plant can produce over 120,000 seeds (begging the question why is it such an uncommon plant to find, but there we go!)

NEUTRAL

Cerastium fontanum Common Mouse-ear

Not to be confused with Mouse-ear Hawkweed, this relatively common plant has delightful soft hairy leaves, very much resembling the ears of mice (quite large mice, granted).

The delicate white flowers have very notched petals, and can be confused with the Stitchworts, all of which have needle-like leaves (think - needles for stitching).

Despite its delicate looks this plant is a strong competitor, and in impoverished grasslands where fertilisers have been applied it can often be the only flower, alongside clover, that grows there.

NEUTRAL

Conopodium majus Pignut

Favouring acidic habitats this is a delightful plant of woodlands, waysides and meadows on heavier soils.

The leaves are incredible delicate, resembling Fennel, and can only really be muddled with Meadow Saxifrage, which are in fact much chunkier.

If you are lucky enough to find thousands of them and have the landowners permission you can dig up the rootstock and eat it, to revel in its wonderful nutty flavour.

NEUTRAL

Dactylorhiza fuchsii

Common Spotted-orchid

The Dactylorhiza group of orchids can be a stinker to ID, with the Marsh and Heath Orchids plus numerous hybrids in the equation, but in general terms;

- Look for spots on the leaves, running across the leaf rather than up and down as is the case with Early Purple Orchid.
- The stems are solid (hollow in Marsh Orchids).
- The lobes on the bottom petal are fairly well separated with the middle lobe lower than the others (much more shallow lobed in Heath Orchids).

Alternatively, just enjoy the fact you've found an orchid and marvel in their beauty without getting too stressed about the ID!

DAMP

Galium palustre Common Marsh-bedstraw

Galium album Hedge Bedstraw

Unmistakably a bedstraw with its whorls of thin leaves, this can form large mats in wet meadows. It can however be muddled with other members of this genus, so a few checks need to be carried out!

1. If it sticks to your clothing it is Cleavers (*Galium aparine*).

2. If the flowers form dense clusters concentrated at the top of the plant you might have Hedge Bedstraw (*Galium album*)

3. Check the prickles along the edge of the leaves - they should be backward facing with a blunt end to the leaf. If they are backwards with a needle at the tip you might have Fen Bedstraw (*Galium uliginosum*), which is by no means confined to the fens!

NEUTRAL DAMP

Iris pseudacorus Yellow Iris

Unmistakable member of the Iris family - the only one to be found in damp meadows and waterside habitats (there is a superficial resemblance to Stinking Iris, which is smaller, grows on dry soils and smells of meat when the leaves are crushed).

Frequently seen along river banks plants can also be found through damp meadows, but only in high quality habitats.

DAMP

Ophioglossum vulgatum Adder's-tongue

A bizarre member of the ‘fern allies’.

A single leafy frond can hide moangst dense grass, and be confused with lords and Ladies, until its remarkable fertile shoot emerges, looking like a snake’s tongue.

NEUTRAL

Potentilla anserina Silverweed

This member of the Rose family is always a surprising find in damp meadows, as one is so used to seeing it on trampled path edges.

So-called due to the silver tinge formed by the dense layer of hairs on the leaves, which can be variable depending on levels of shade (and angle of the sun!).

The flowers are extremely similar to Creeping Cinquefoil (*Potentilla reptans*) but this has very different palm shaped leaves.

DAMP

Primula veris Cowslip

Nothing says spring like a bank of nodding Cowslip heads, accompanied by the call of a Chiffchaff in the background!

With tubular nodding heads, rather than the open flowers of Primrose, it can also be told apart by the leaves narrowing down to a visible stem,

(If you are in the East of England do keep an eye out for Oxslip, with its downy stems, less wrinkled leaves and very one-sided droop to the flowers)

DAMP

Ranunculus repens Creeping Buttercup

A common site wherever you are, this species should not be muddled up with Meadow or Bulbous Buttercups.

If you pick a leaf you will see the that the uppermost lobe is separated from the rest with its own stem (the leaflet is literally *creeping* off on its own).

Meadow Buttercup tends to have much more divided leaves, but they are all ultimately connected together. Bulbous Buttercup has leaf somewhere in the middle of these, but in flower look for the backwards pointing sepals, and if you're still in doubt you can look for a large bulb where the stems reaches the ground.

Creeping Buttercup favours high nutrients and disturbed soils, which is partly why it is so common in much of today's countryside.

NEUTRAL DAMP

Rumex acetosa Common Sorrel

A rather showy member of the Dock family, with smaller leaves than the more common members.

The leaves have a cordate base with two pointy sections on each side, but alway pointing downwards rather than up and around as you find in Sheep's Sorrel.

The leaves are edible, with a slightly citrus apple flavour.

NEUTRAL DAMP

Sanguisorba officinalis Great Burnet

Great Burnet is now a rather uncommon site, existing only on some of the best damp meadow left in the country. However where you find it it can occur in swards of thousands of plants.

The leaves are reminiscent of the much smaller Salad Burnet with rows of opposite leaflets with toothed margins, but they are much larger and lack the red stem.

The flowers are really unique, with their dark dark crimson colour and compact sausage-like heads.

NEUTRAL DAMP

Silene flos-cuculi Ragged-Robin

An unmissable flower, looking like a Red Campion sometime has taken a pair of scissors to.

The delicate pink straggly flowers occur in drifts in wet sections of meadows, usually indicating damp conditions under foot.

In leaf only look our for sharp spearlike leaves, looking a bit like a Stitchwort.

This species has recently changed in name, and will appear under *Lychnis* in most flower books.

DAMP

Symphytum officinale

Common Comfrey

Large bristly plant, growing up to 1.5m. Easily spotted by its large floppy leaves, you can also look for the wings on the stem.

In summer it develops dangling tubular flowers, which can be cream, yellow or pink-purple, and are a huge source of pollen and nectar for bees.

NEUTRAL

Stellaria holostea Greater Stitchwort

A wonderful plant of old meadows, hedge banks and woodlands.

It is larger than the similar Lesser Stitchwort (which tends to favour more acidic wild and even grows on heathland).

The key diagnostic is how joined up the petals are. Look at one of the five petals (not at the gap between them) and ask yourself 'Is the **greater** part of it joined together?' - if the answer is yes, then you have Greater Stitchwort. Look at the photo below for comparison.

NEUTRAL

Lesser Stitchwort
(Stellaria graminea)

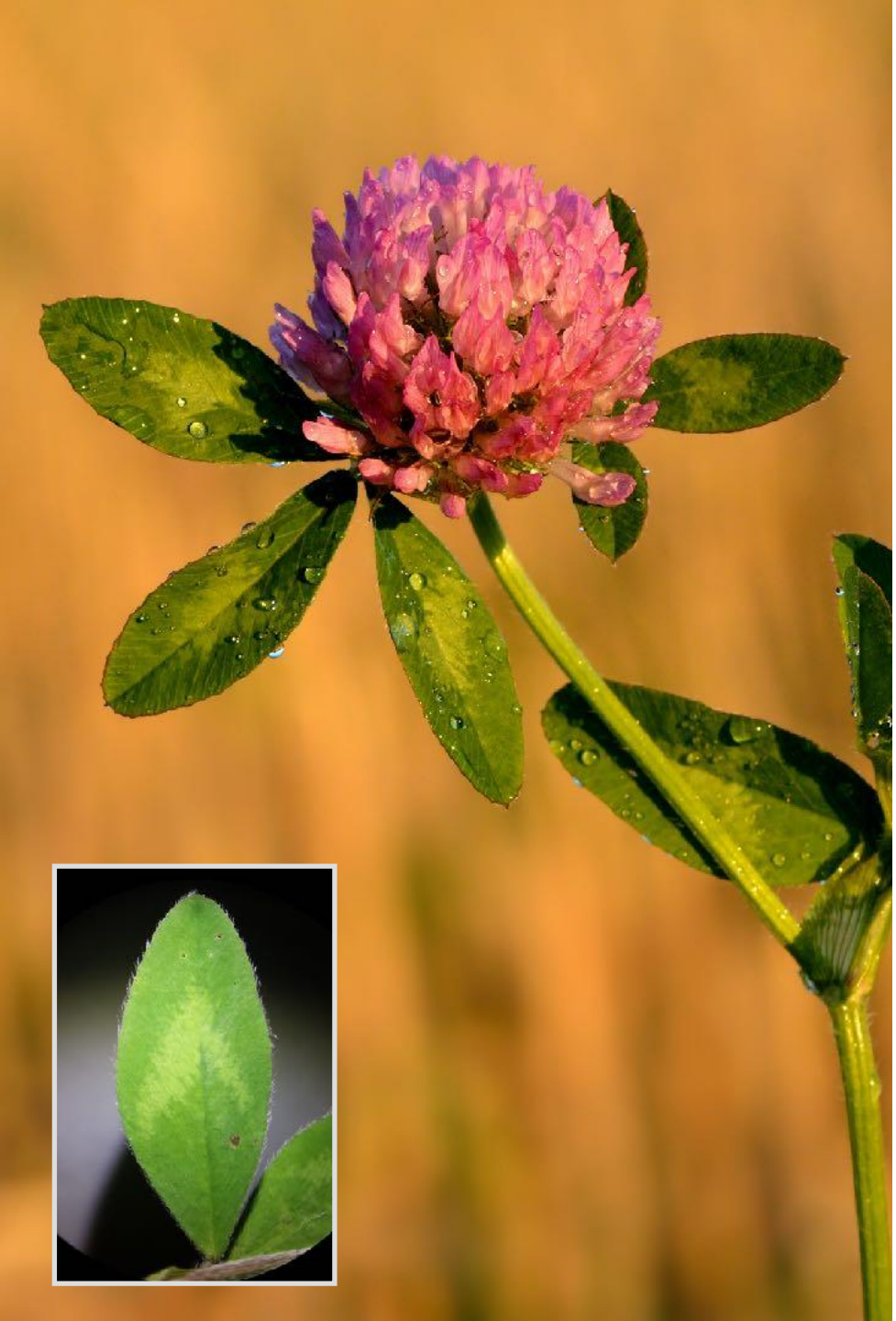
Succisa pratensis Devil's-bit Scabious

This is an odd plant, in that it either grows on parched highly calcareous grasslands, or in very damp acid meadows. This is part explains the range distribution of the Marsh Fritillary butterfly (for which this is the larval foodplant), which can be a confusing find on chalk downland!

The young leaves have a highly visible white mid-rib, looking a bit like Pak Choi. Unlike the other members of the scabious group these leaves remain fairly unchanged on the flower stem, which gives rise to striking purple flowers.

Personally I think they are absolutely spectacular in bud and in seed, and a bit messy in flower, but that's just my over-tidy mind I suspect!

NEUTRAL



Trifolium pratense Red Clover

Unmistakable in flower with its red inflorescences, it is a useful one to be able to identify from leaf only.

Look at the leaf surface, especially on the underside and you should see a fine felty covering of hairs. White Clover is completely hairless. Don't be confused by the white insignia on the leaf, which occurs on a range of clovers.

Red Clover tends to indicate lower nutrient levels than White Clover, which occurs in more polluted and disturbed environments.

NEUTRAL DAMP

Valeriana dioica Marsh Valerian

Valerians are a confusing group of flowers as each one seems to belong to a separate genus. The flowers are however similar, forming fairly dense clusters.

Marsh Valerian is a pinky white colour, and tends to occur sporadically in damp meadows.

The leaf shape is very distinctive once you know it - very divide with a pointed spearlike tip.

DAMP

Quiz time!

A check up on how much you know…

Can you name these three rushes just from their stems?


Compact
Soft
Hard


Marsh Foxtail


Yorkshire Fog

Common Spotted Orchid

Devil’s-bit Scabious

Ragged Robin

Red Clover


Marsh Marigold


Musk Thistle


Common Mouse-ear


Greater Stitchwort

Image Credits

Alopecurus pratensis	Dominic Price				
Deschampsia cespitosa	Dominic Price				
Holcus lanatus	Dominic Price				
Juncus conglomeratus	Dominic Price				
Juncus effusus	Dominic Price				
Juncus inflexus	Dominic Price				
Caltha palustris	CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=104002	By Dominicus Johannes Bergsma - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=26508784	By Richard Bartz, Munich aka Makro Freak - Own work, CC BY-SA 2.5, https://commons.wikimedia.org/w/index.php?curid=3861183		
Cardamine pratensis	By Gilles San Martin from Namur, Belgium - Cardamine pratensis, CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=45480666	By Bartosz Cuber - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=26141674	CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=589618		
Carduus nutans	By Roger Culos - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=86072762	By Meneerke bloem - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=27617262	By Matt Lavin from Bozeman, Montana, USA - Carduus nutansUploaded by Tim1357, CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=22755437		
Cerastium fontanum	By Rasbak - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=10643343	By Peter O'Connor aka anemoneprojectors from Stevenage, United Kingdom - Common Mouse-ear (Cerastium fontanum), CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=75305329			
Conopodium majus	By Ragnhild&Neil Crawford from Sweden - Nötkörvel (Conopodium majus)-1, CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=75695904	By Vatadoshu - Own work, CC0, https://commons.wikimedia.org/w/index.php?curid=58527274	By Rosser1954 - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=59774970	By Vatadoshu - Own work, CC0, https://commons.wikimedia.org/w/index.php?curid=58527277	By Paul van de Velde from Netherlands - Franse Aardkastanje - Conopodium majus, CC BY 2.0, https://commons.wikimedia.org/w/index.php?curid=74013549
Dactylorhiza fuchsii	Dominic Price				
Filipendula ulmaria	By Algirdas at the Lithuanian language Wikipedia, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=7880119	By Wilhelm Zimmerling PAR - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=87483863	By "pastilletes"/Joan Simon, Barcelona, España - flickr.com, CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=4800431		
Galium palustre	By Kristian Peters -- Fabelfroh 08:10, 20 September 2006 (UTC) - Self-photographed, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=1191402	By Joanna Boisse - https://atlas.roslin.pl/plant/7036, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=81824850			
	CC BY-SA 3.0, https://commons.wikimedia.org/w/ind	By Robert Flogaus-Faust - Own work, CC BY 4.0, https://commons.wikimedia.org/w/ind	By Qwert1234 - Qwert1234's file, CC BY-SA 3.0, https://commons.wikimedia.org/w/ind		