



NPMS+

National Plant Monitoring Scheme methods at a local level

An introduction to Amenity Grassland – NPMS+ specific habitat



**National Plant
Monitoring Scheme**



NPMS Lowland grassland – broad habitat category



**NPMS Lowland grassland – broad
habitat category**

Amenity grassland

Dry acid grassland

**Neutral damp
grassland**

**Dry calcareous
grassland**

**Neutral pastures and
meadows**

What is amenity grassland?

- It's more about the use than the habitat type
- Short, regularly cut grass sward
- BUT – can include longer areas
- Can be herb rich or can be species poor
- Grass species can be very tricky to identify



Management types – grass heights

- Dependent on use
- Useful information to record in terms of management
- Where should you record your plots?
- In short and long areas for comparison?



When to record in another category

- Is the site managed as a lowland grassland habitat category?
- Is it grazed or cut for hay?
- Is it floodplain meadow?
- Is it a remnant ancient grassland site?
- Are there indicator species present that are suggestive of a lowland grassland habitat category?

Examples



Examples

Churchyards
and
cemeteries



Playing fields
and play parks

Golf
courses

Private
gardens

Country
estate lawns



How?

- Only 1 grass species in Wildflower level
- Wildflower and Indicator level likely to record only species in flower
- Try to survey before a cut, not straight after
- Many low lying species can still flower in short swards
- Get to know your plots for best timings

When is the best time?

Vegetation heights and percentages

Vegetation height

- Two boxes – first visit and second visit
- For each category choose a % score that best fits your plot
- Most species likely to occur in the first two categories (<10cm and 11-30cm)
- It doesn't have to add up to 100%
- It is only an estimate

Vegetation height (both visits), enter in the box how much of the vegetation falls into each category (excluding the canopy layer if in woodland) using the following scores: 0 = 0%; 1 = 1-33%; 2 = 34-66%; 3 = 67-100%

<10cm 11-30cm 31-100cm 101-300cm >300cm

Species – Wildflower level

Name	Common name	Name	Common name
<i>Achillea millefolium</i>	Yarrow	<i>Lotus corniculatus</i>	Common Bird's-foot Trefoil
<i>Bellis perennis</i>	Daisy	<i>Malva moschata</i>	Musk Mallow
<i>Centaurea nigra</i>	Common Knapweed	<i>Ophrys apifera</i>	Bee Orchid
<i>Cirsium arvense</i>	Creeping Thistle	<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Cynosurus cristatus</i>	Crested Dog's-tail	<i>Poterium sanguisorba</i>	Salad Burnet
<i>Dactylorhiza sp/Anacamptis sp</i>	Orchids (Common Spotted, Marsh, Pyramidal)	<i>Prunella vulgaris</i>	Self-heal
		<i>Ranunculus acris</i>	Meadow Buttercup
<i>Fallopia japonica</i>	Japanese Knotweed	<i>Rhinanthus minor</i>	Yellow Rattle
<i>Filipendula ulmaria</i>	Meadowsweet	<i>Rubus fruticosus agg.</i>	Bramble
<i>Galium verum</i>	Lady's Bedstraw	<i>Rumex acetosa</i>	Common Sorrel
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Heracleum sphondylium</i>	Hogweed	<i>Taraxacum agg.</i>	Dandelion
<i>Impatiens glandulifera</i>	Himalayan Balsam	<i>Trifolium pratense</i>	Red Clover
<i>Knautia arvensis</i>	Field Scabious	<i>Urtica dioica</i>	Nettle
<i>Leucanthemum vulgare</i>	Oxeye Daisy	<i>Vicia cracca</i>	Tufted Vetch

Wildflower level species we are going to cover

Grasses

Cynosurus cristatus – Crested Dog's-tail

Non-natives and negative indicators

Fallopia japonica – Japanese Knotweed

Green/brown flowers

Poterium sanguisorba – Salad Burnet

Yellow flowers

- *Galium verum* – Lady's Bedstraw
- *Ranunculus acris* – Meadow Buttercup
- *Rhinanthus minor* – Yellow Rattle

Blue/purple flowers

- *Centaurea nigra* – Common Knapweed
- *Knautia arvensis* – Field Scabious
- *Prunella vulgaris* – Self-heal

Pink flowers

- *Dactylorhiza* sp/*Anacamptis* sp – Orchids
- *Geranium dissectum* – Cut-leaved Crane's-bill
- *Ophrys apifera* – Bee Orchid

Red flowers

- *Rumex acetosa* – Common Sorrel
- *Rumex acetosella* – Sheep's Sorrel

Grasses

Cynosurus cristatus – Crested
Dog's-tail



Spikelet –
Flowering unit,
consisting of two
glumes and 1 or
more florets



Crested Dog's-tail

- Flowers – inflorescence – Spike-like, stiff, 1 sided
- Tufted
- Spikelets sessile



Grasses

Cynosurus cristatus – Crested
Dog's-tail

Crested Dog's-tail

- Flowers – inflorescence – Spike-like, stiff, 1 sided
- Tufted
- Spikelets sessile



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Grasses

Cynosurus cristatus – Crested
Dog's-tail

Crested Dog's-tail

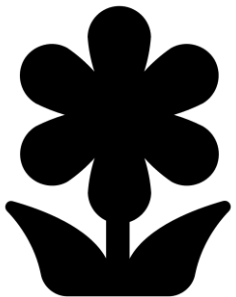
- Leaves – bright, glossy green
- Leaves – prominent midrib below and closely ribbed above
- Sheaths straw coloured



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**Non-natives and
negative indicators**
Fallopia japonica – Japanese
Knotweed

Japanese Knotweed

- Hairless
- Up to 2m tall
- Spreads by rhizomes
- Forms thickets



Non-natives and negative indicators

Fallopia japonica – Japanese
Knotweed

Japanese Knotweed

- Leaves – broad, oval/triangular
- Leaf tip – pointed
- Leaf base - truncate



Non-natives and negative indicators

Fallopia japonica – Japanese
Knotweed

Japanese Knotweed

- Zigzag reddish stems
- Flowers – White in branched spikes
- Fruit – 3 angled, dark-brown glossy nut



Green/brown flowers

- *Poterium sanguisorba* – Salad Burnet

Salad Burnet

- Flower heads globular, made up of tiny greenish flowers
- Lower flowers – male or bisexual with many long stamens
- Upper flowers – female with 2 red-purple stigmas (feathery)



Green/brown flowers

- *Poterium sanguisorba* – Salad Burnet

Salad Burnet

- 4 green or purplish sepals
- No petals
- No epicalyx



Green/brown flowers

- *Poterium sanguisorba* – Salad Burnet

Salad Burnet

- Basal rosette of leaves – pinnate with rounded but deeply toothed leaflets
- Smells of cucumbers when crushed
- Stem leaves similar but smaller



Yellow flowers

- *Galium verum* – Lady's Bedstraw

Lady's Bedstraw

- Yellow, small flowers
- Panicles leafy and terminal
- Flowering stem 4-angled



Yellow flowers

- *Galium verum* – Lady's Bedstraw

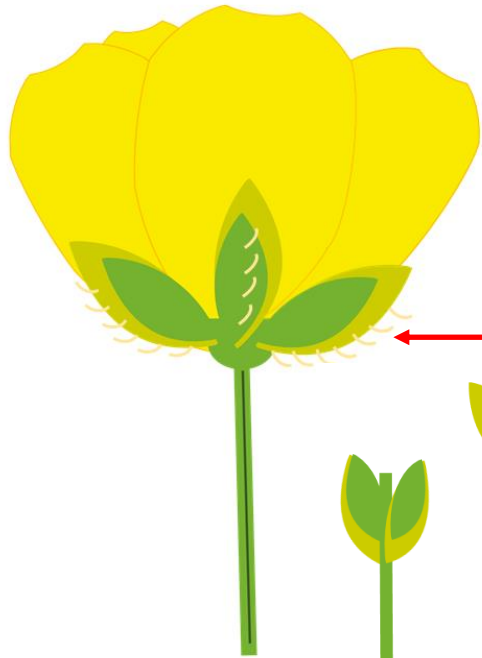
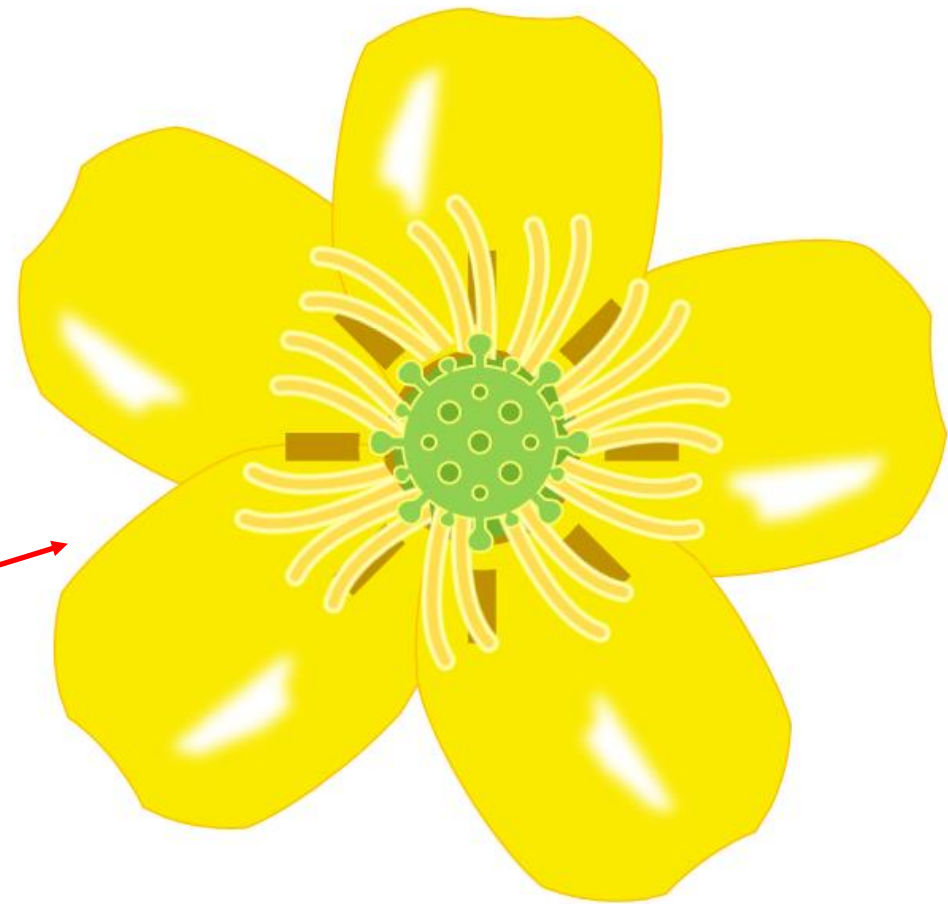
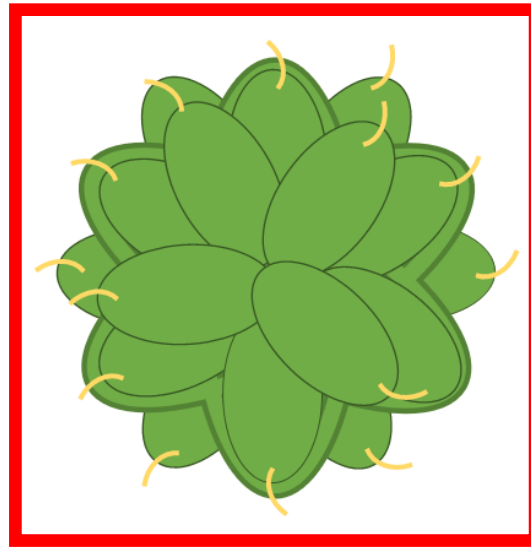
Lady's Bedstraw

- Leaves linear, mucronate (pointed tips)
- Leaves dark green above with margins rolled back
- 8-12 in a whorl

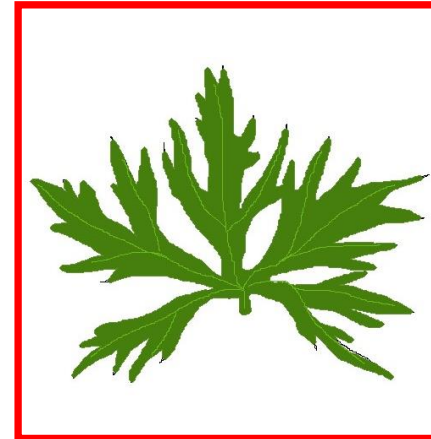
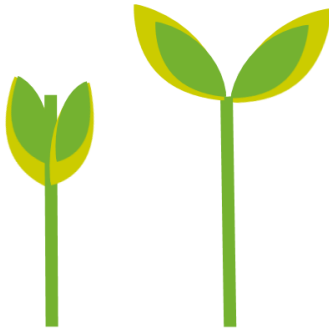


Yellow flowers

- *Ranunculus acris* – Meadow Buttercup

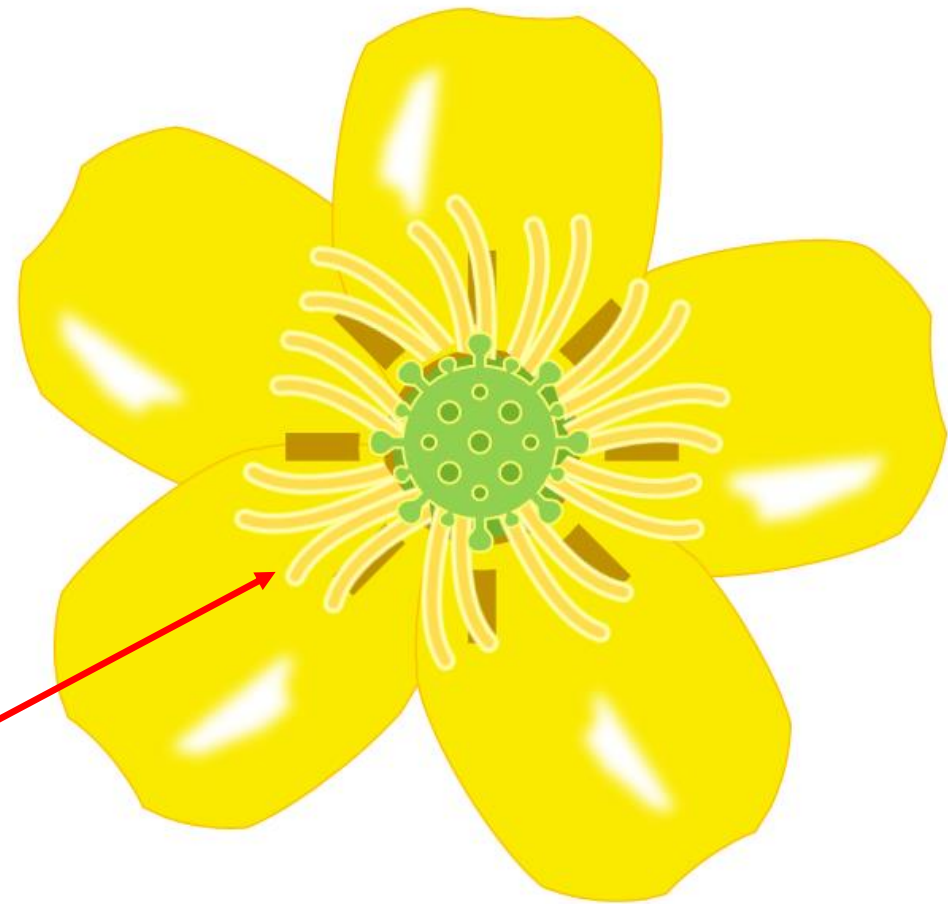
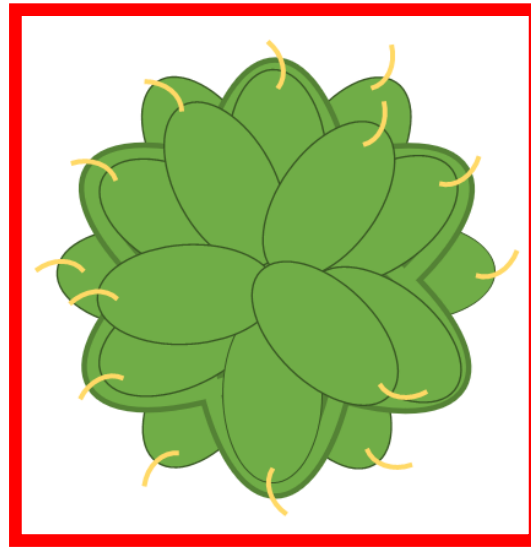


- 5 petals
- 5 sepals
- Sepals not reflexed – they are cupping the underside of the petals

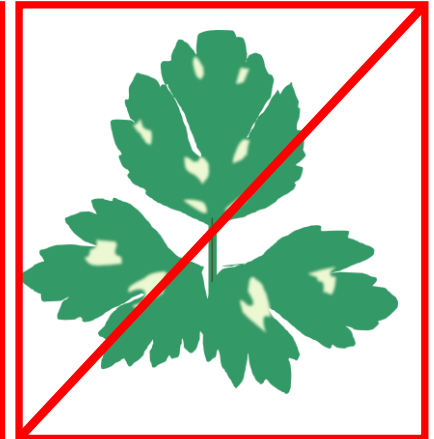
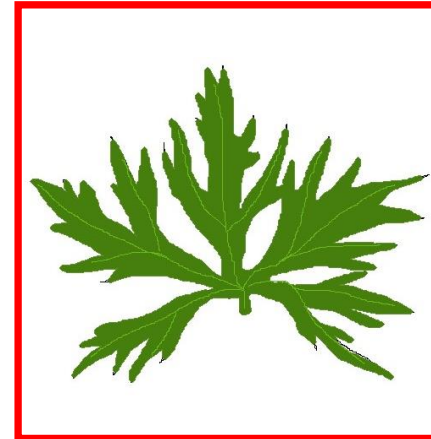
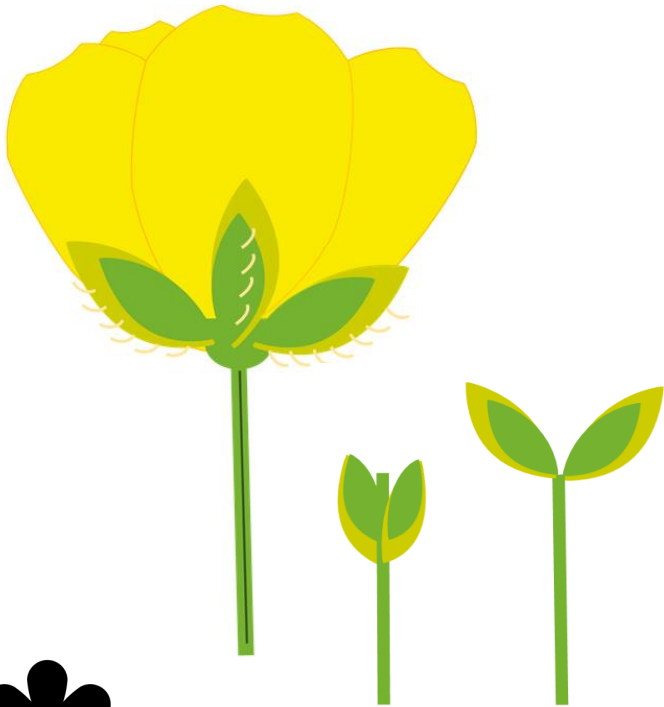


Yellow flowers

- *Ranunculus acris* – Meadow Buttercup

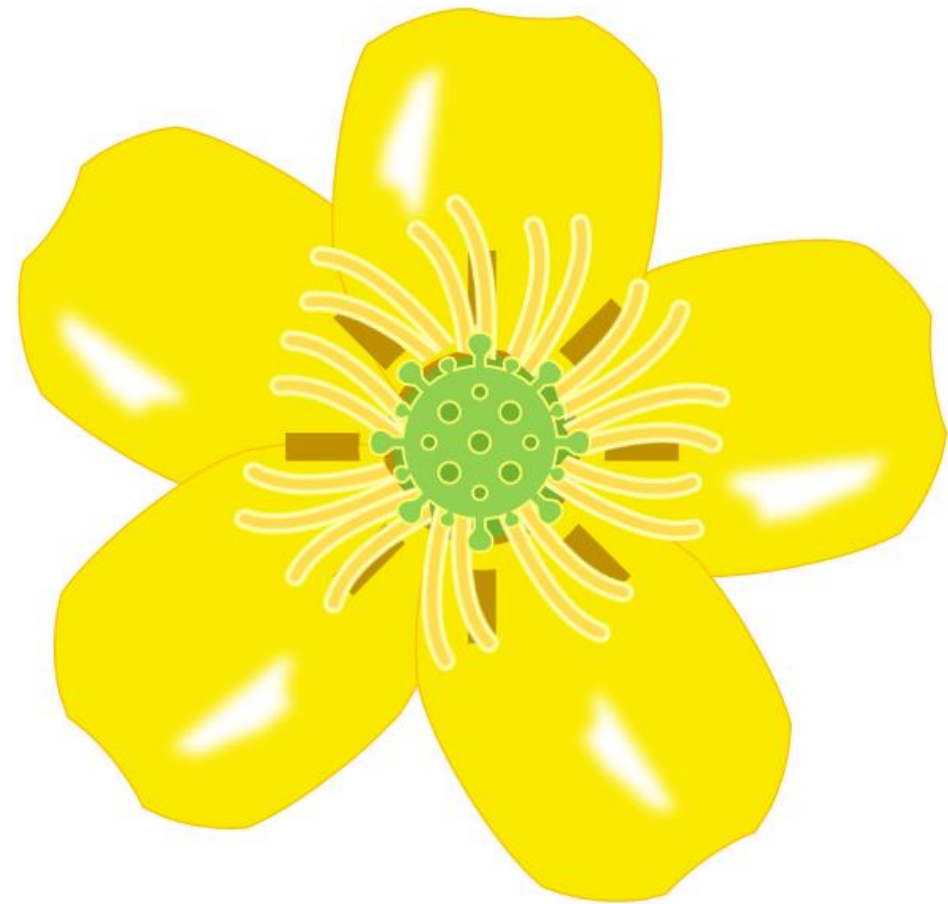
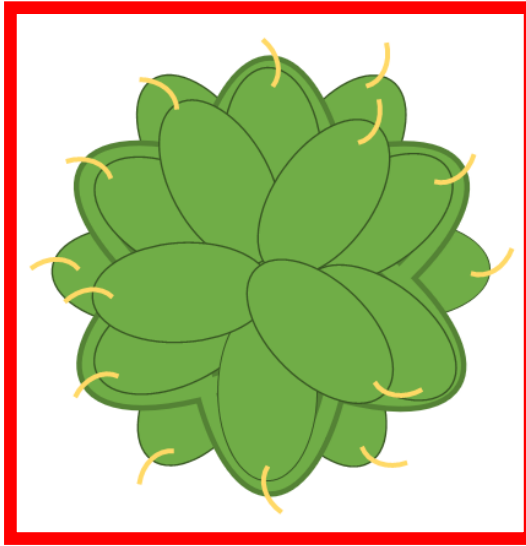


- Centre of flower there are many stamen (male parts)
- And many free carpels (the female parts)

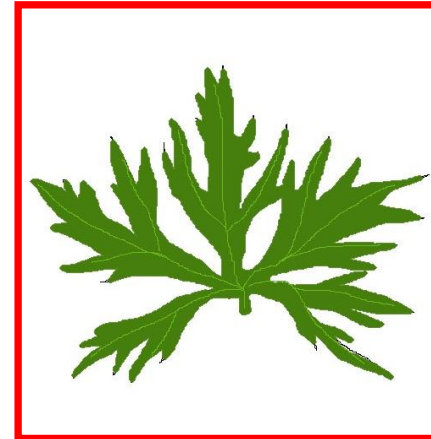
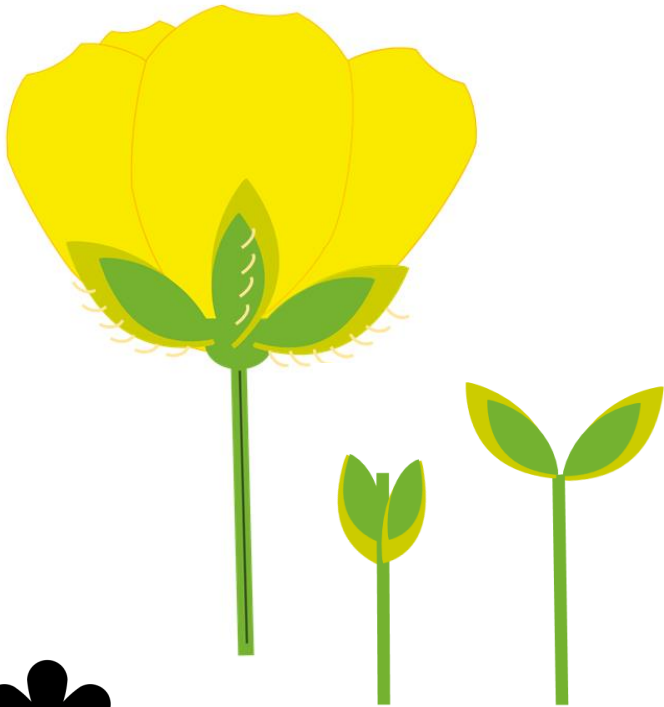


Yellow flowers

- *Ranunculus acris* – Meadow Buttercup

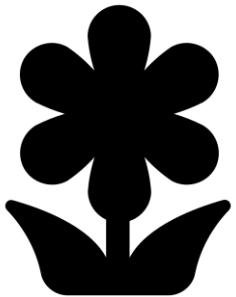


- Leaves are alternate
- Palmately lobed
- Very divided unlike Creeping Buttercup



Yellow flowers

- *Ranunculus acris* –
Meadow Buttercup



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Yellow flowers

- *Ranunculus acris* –
Meadow Buttercup



Yellow flowers

- *Rhinanthus minor* – Yellow Rattle

Yellow Rattle

- Semi-Parasitic annual
- Stems are black spotted
- Leaves opposite and stalkless, narrow-lanceolate and coarse toothed
- Flowers in short leafy spikes
- Large seeds rattle inside calyx when ripe



Yellow flowers

- *Rhinanthus minor* – Yellow Rattle

Yellow Rattle

- Calyx very flattened on each side
- Calyx inflated and bladder like in fruit, hairless except on margins
- Corolla – yellow, 2 lipped. Upper lip flattened on each side with 2 short violet teeth
- Corolla – lower lip 3-lobed

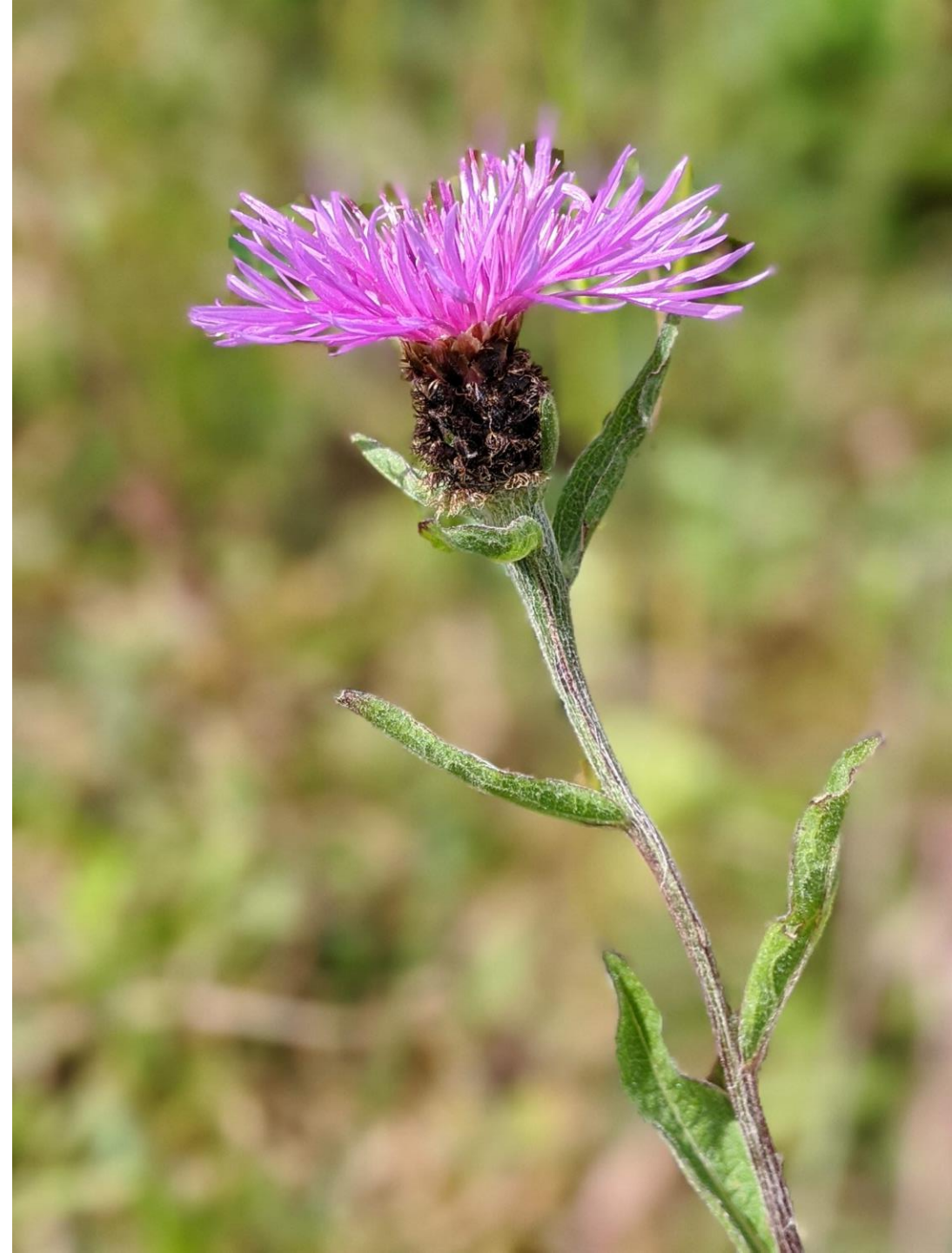


Blue/purple flowers

- *Centaurea nigra* – Common Knapweed

Common Knapweed

- Very variable
- Roughly hairy
- Stems grooved
- Flower head terminal (multiple florets)
- Florets purplish-pink

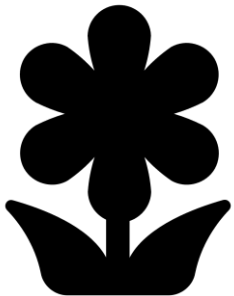


Blue/purple flowers

- *Centaurea nigra* – Common Knapweed

Common Knapweed

- Lower leaves stalked, usually unlobed
- Upper leaves stalkless, sometimes pinnatifid (pinnate-like divisions), oblong to linear-lanceolate
- Achenes – hairy
- Pappus – of very short bristly hairs



Blue/purple flowers

- *Centaurea nigra* – Common Knapweed

Common Knapweed

- Some with long rayed florets on the outside
- Involucre is rounded (globose)
- Tips of involucre bracts brown, triangular with long, branched bristle-like teeth
- Lower parts of bracts oblong and pale



Blue/purple flowers

- *Knautia arvensis* – Field Scabious

Field Scabious

- Flowers – heads of multiple flowers
- Stout, hairy stalks
- Calyx – 8 teeth
- Corollas – blue/violet with 4 unequal lobes



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Blue/purple flowers

- *Knautia arvensis* – Field Scabious

Field Scabious

- Roughly hairy and more solid than the confusion species Small Scabious
- Basal leaves - larger, usually unlobed, but blunt toothed
- Stem leaves – deeply pinnatifid (like pinnate divisions)
- Stem leaves – coarse hairy segments and elliptical end leaflet



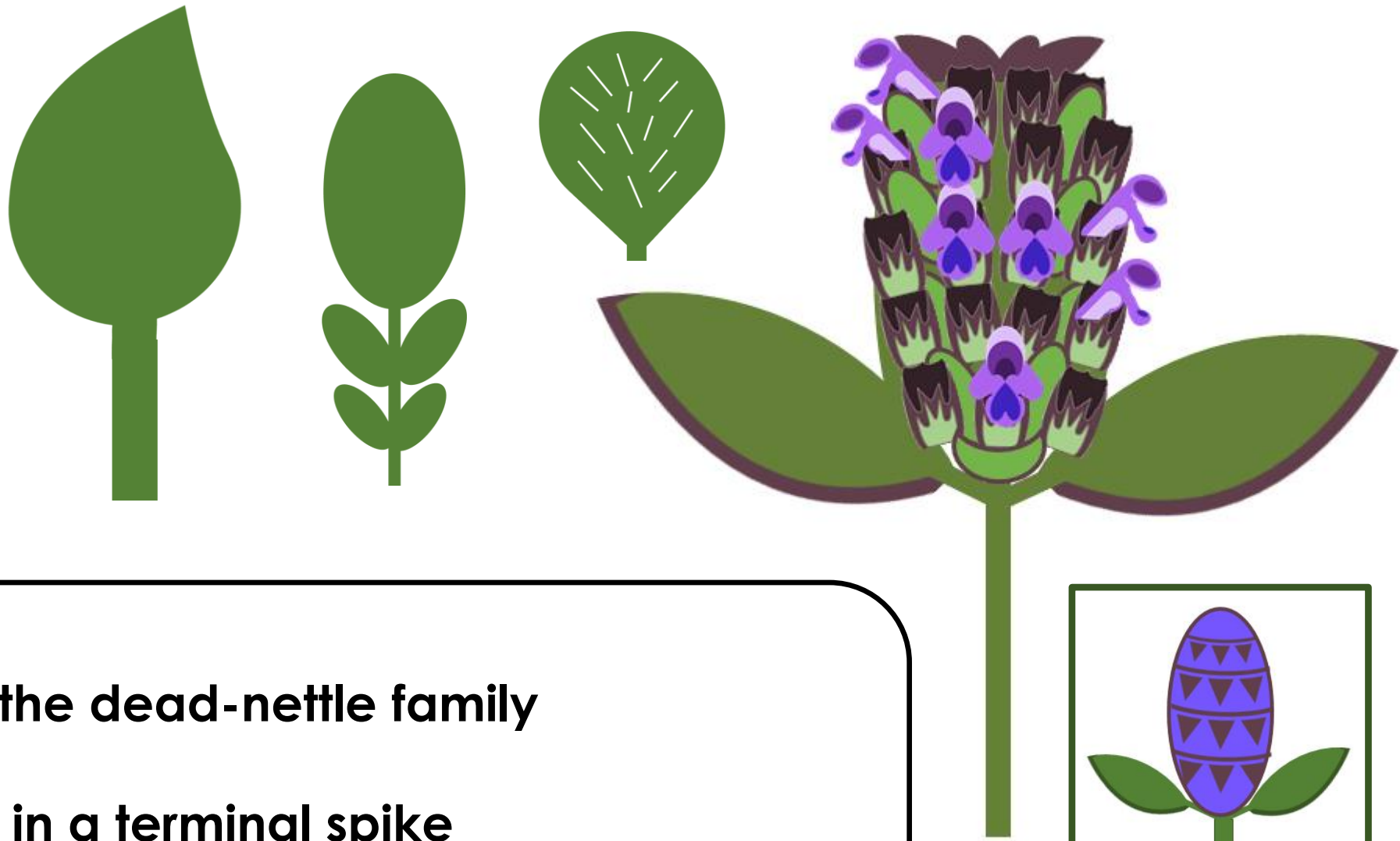
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Blue/purple flowers

- *Prunella vulgaris* –
Self-heal



- One of the dead-nettle family
- Flowers in a terminal spike
- Leaves opposite

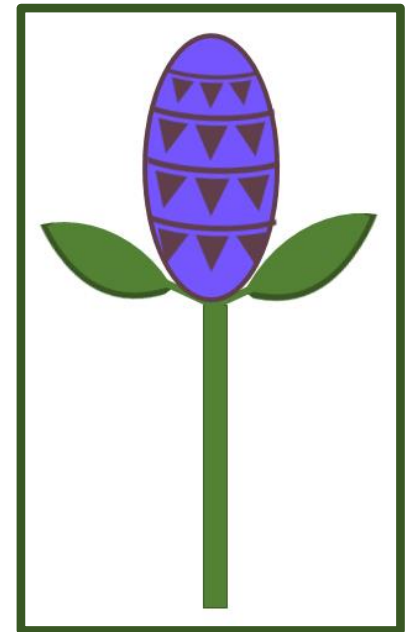


Blue/purple flowers

- *Prunella vulgaris* –
Self-heal

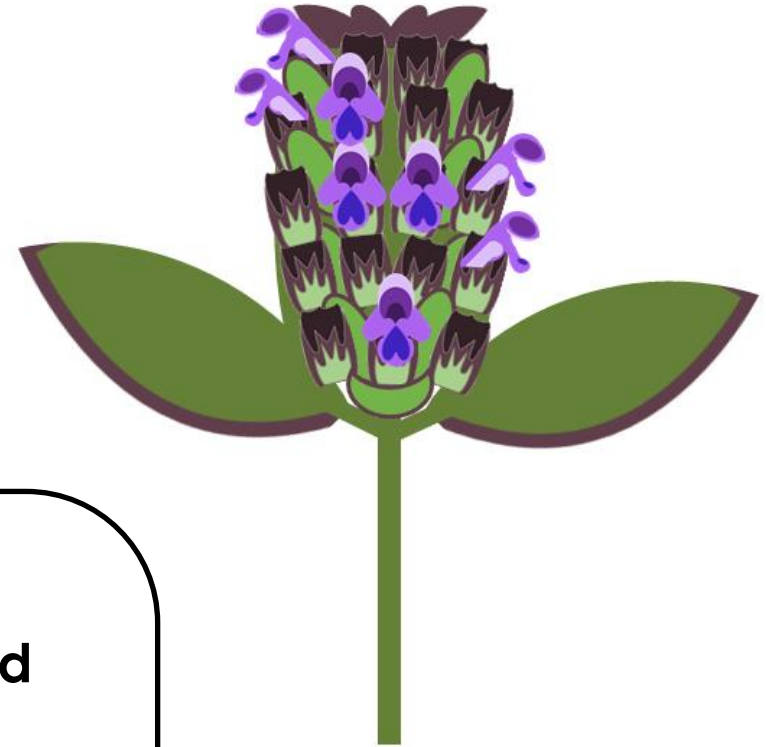


- Main stem leaves – simple and generally untoothed
- Basal leaves can be lobed
- Flower spike leaves (bracts) rounded and with long white hairs

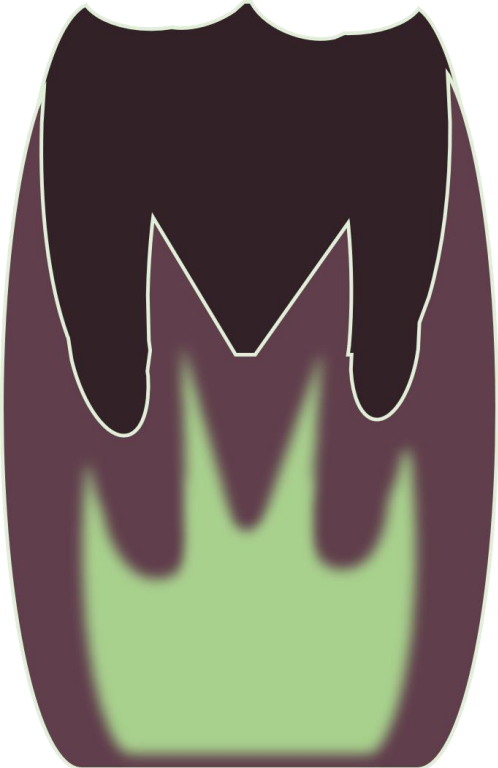


Blue/purple flowers

- *Prunella vulgaris* –
Self-heal

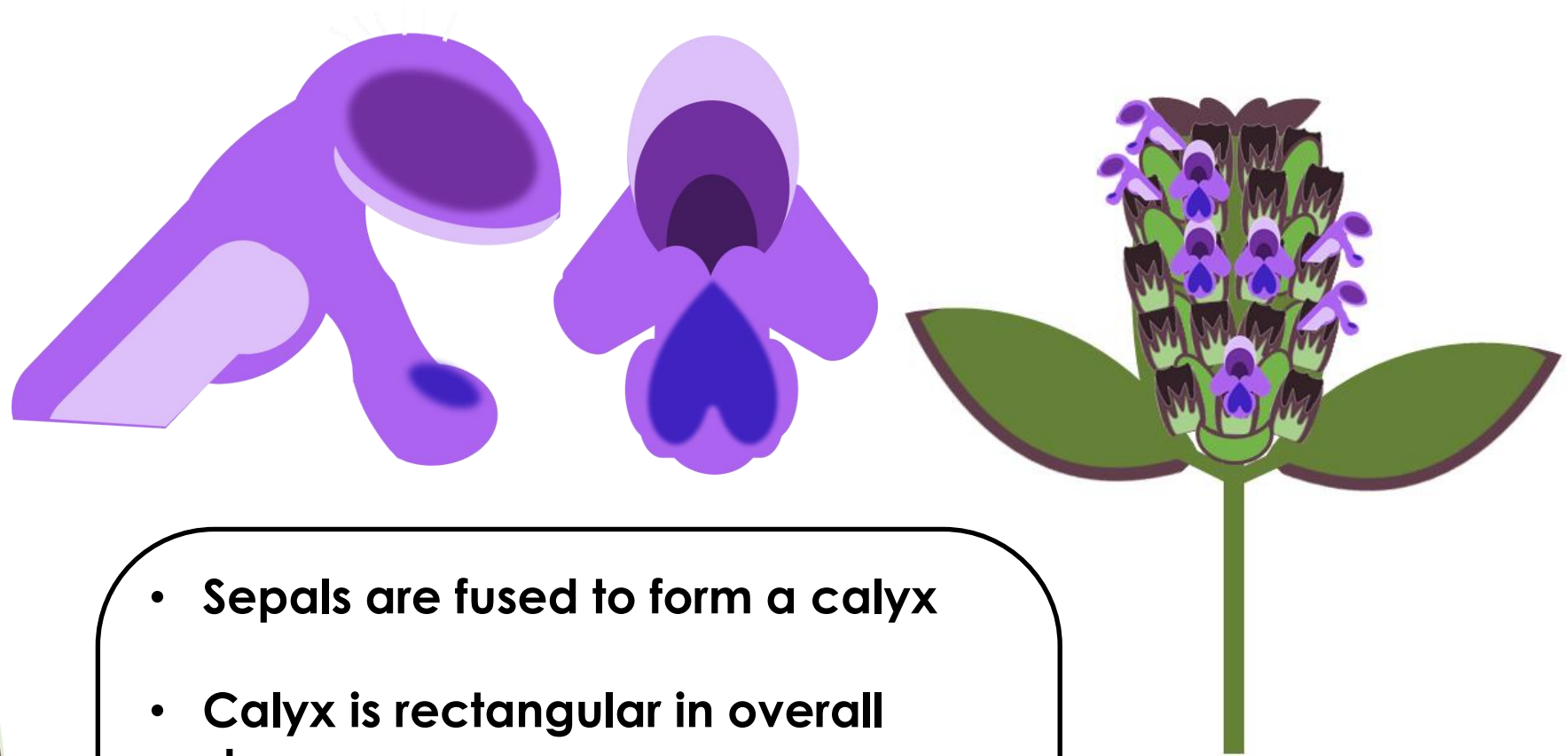


- Flowers formed into tube shaped
corollas
- 2 lips
- Top lip is hooded
- Bottom lip is lobed into 3 sections

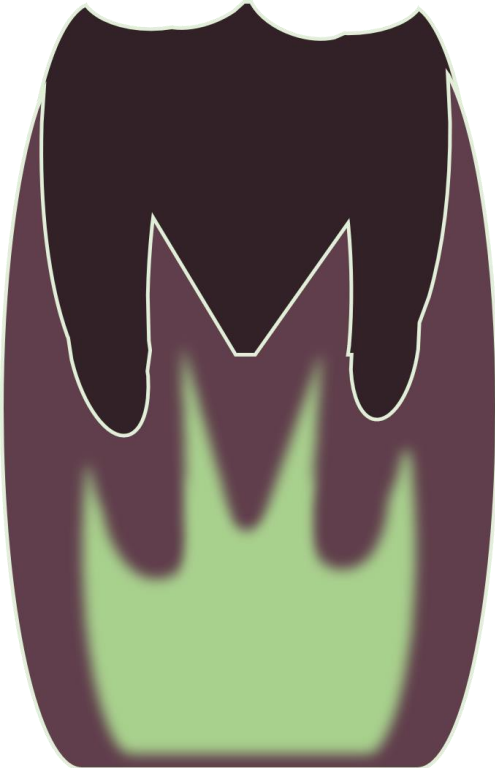


Blue/purple flowers

- *Prunella vulgaris* –
Self-heal



- Sepals are fused to form a calyx
- Calyx is rectangular in overall shape
- Calyx is 2 lipped
- The upper lip has 3 shallow teeth
- The lower lip has 2 more definite teeth



Blue/purple flowers

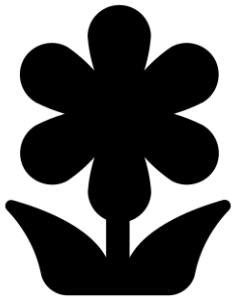
- *Prunella vulgaris* –
Self-heal



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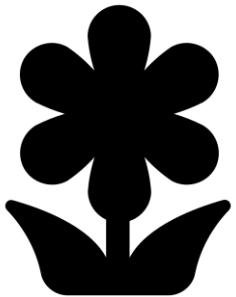


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Blue/purple flowers

- *Prunella vulgaris* –
Self-heal



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Pink flowers

- *Dactylorhiza*
sp/Anancamptis sp –
Orchids

Orchids

- Largest & most distinctive group of flowering plants
- Flowers in spikes or racemes
- Flowers usually pink/purple/white



Pink flowers

- *Dactylorhiza*
sp/Anancamptis sp –
Orchids

Orchids

- Flowers parts in whorls
- Flowers – outer part made up of 3 sepals
- Flowers – inner part made of 3 petals but with one very different from the others forming a lip - labellum



Pink flowers

- *Dactylorhiza*
sp/Anancamptis sp –
Orchids

Orchids

- Basal leaves in rosette
- Can be spotted in a few species
- Hollow, solid stems



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Pink flowers

- *Geranium dissectum* – Cut-leaved Crane's-bill

Cut-leaved Crane's-bill

- Petals – pink
- Petals – notched
- Leaves divided almost to base into linear lobes
- Fruits and leaves hairy



Pink flowers

- *Geranium dissectum* – Cut-leaved Crane's-bill

Cut-leaved Crane's-bill

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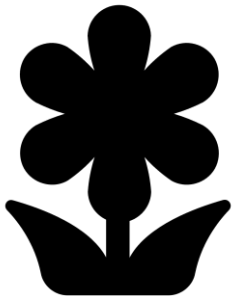


Pink flowers

Malva moschata – Musk
Mallow

Musk Mallow

- Sparsely hairy
- Stem leaves – deeply cut/divided
- Basal leaves – kidney-shaped



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Pink flowers

Malva moschata – Musk Mallow

Musk Mallow

- Flowers – rose-pink
- In a terminal cluster
- Epicalyx – group of bracts not sepals (looks like an extra calyx) segments very narrow



Pink flowers

- *Ophrys apifera* – Bee Orchid

Bee Orchid

- Large flowers
- 2-7 flowered
- Outer tepals deep pink
- Labellum resembling a bee



Pink flowers

- *Ophrys apifera* – Bee Orchid

Bee Orchid

- Basal leaves greyish-green (almost silver)
- Slightly curled leaves
- Can be seen in winter as a rosette

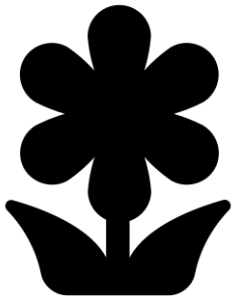
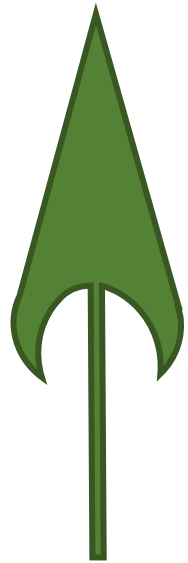


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Red flowers

- *Rumex acetosa* – Common Sorrel



Common Sorrel

- Dock family, but more slender
- Leaves shiny and arrow shaped
- Stipules – tubular, brown and fringed



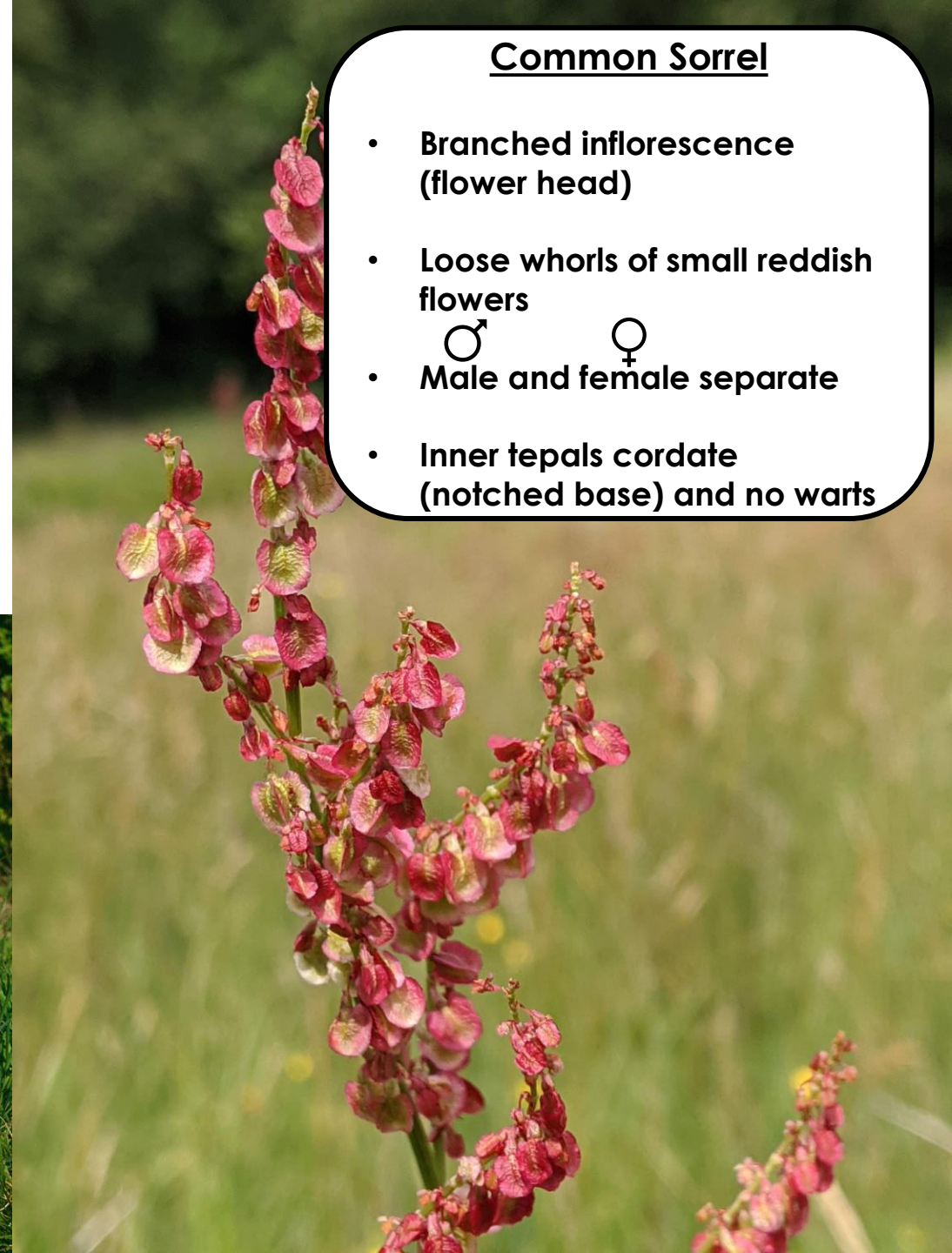
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Common Sorrel

- Branched inflorescence (flower head)
- Loose whorls of small reddish flowers
- ♂ ♀
Male and female separate
- Inner tepals cordate (notched base) and no warts

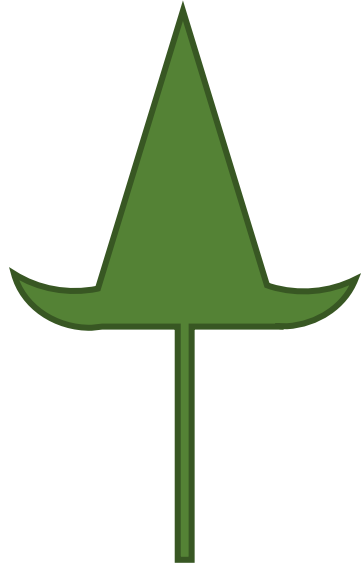


Red flowers

- *Rumex acetosella*
– Sheep's Sorrel

Sheep's Sorrel

- Looks like a much smaller version of Common Sorrel
- Narrower leaves that are hastate-shaped (like arrowheads)
- Side lobes of arrow shaped leaves pointing outwards or forwards



Species – Indicator level only

Name	Common name
<i>Agrostis</i> sp	Bent Grasses
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Conopodium majus</i>	Pignut
<i>Lathyrus pratensis</i>	Meadow Vetchling
<i>Luzula campestris</i>	Field Wood-rush
<i>Medicago lupulina</i>	Black Meddick
<i>Trisetum flavescens</i>	Yellow Oat-grass

Indicator level species are we going to cover

Grasses

- *Agrostis* sp – Bent Grasses
- *Anthoxanthum odoratum* – Sweet Vernal-grass
- *Trisetum flavescens* – Yellow Oat-grass

Yellow flowers

- *Lathyrus pratensis* – Meadow Vetchling
- *Medicago lupulina* – Black Meddick

Wood-rushes

*Luzula
campestris* –
Field Wood-rush

White/Cream Flowers

Conopodium majus -
Pignut

Grasses

- *Agrostis* sp – Bent Grasses



Glumes –
two
membranous
bracts
surrounding
the spikelet
of a grass



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Bent grasses

- Tufted perennials
- Flowering head (inflorescence) a whorled panicle
- Spikelets – 1 flowered
- Glumes longer than the spikelet





Panicle

Spikelet only has 1
single floret

Ligule - short



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Common Bent – *Agrostis capillaris*

- Common/ all habitats
- Inflorescences create a mist affect
- Initially closed and opens to a branched, whorled panicle

NPMS Habitats

- Dry Montane Heathland

Grasses

- *Anthoxanthum odoratum* – Sweet Vernal-grass

Sweet Vernal-grass

- Tufted
- Spike-like panicle
- Sweet smelling (new mown hay)
- Leaves flat and finely pointed



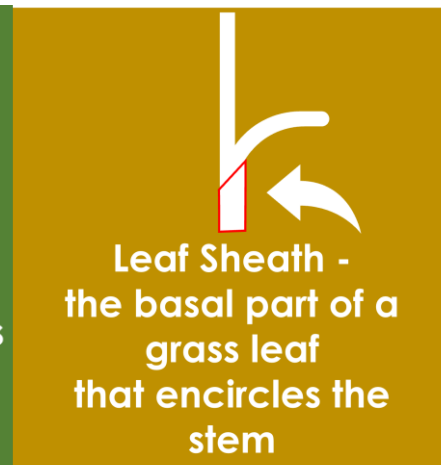
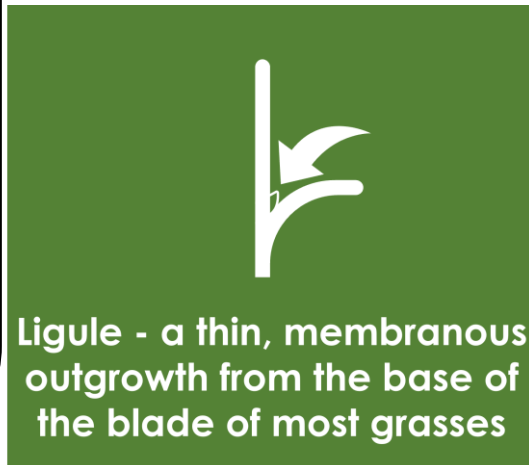
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Grasses

- *Anthoxanthum odoratum* – Sweet Vernal-grass

Sweet Vernal-grass

- Sheaths with obvious ring of hairs at junction with leaf
- Awns – short and bent giving hooked appearance
- Blunt ligules
- Spikelets – 3 flowered – the lower 2 sterile





Spike-like Panicle

Long white hairs at
leaf/stem junction



Short bent
awns/hooks
appearance on
spikelet



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Sweet Vernal Grass – *Anthoxanthum odoratum*

- Common/ all habitats
- Long hairs at leaf junction
- Sweet smelling

NPMS Habitats

- Dry Montane Heathland
- Dry Acid Grassland

Grasses

- *Trisetum flavescens* – Yellow Oat-grass

Yellow Oat-grass

- Leaves – wide, flat and usually sparsely hairy above
- Leaf – fine pointed
- Ligules - short

Yellow Oat-grass

- Inflorescence (flowering head) distinctly yellow and shining
- Loose or somewhat dense panicle



Grasses

- *Trisetum flavescens* – Yellow Oat-grass

Yellow Oat-grass

- Spikelets 2- 4 flowered
- Glumes shining
- Lemmas with tips that have 2 teeth
- Awn – bent, twisted



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Wood-rushes
Luzula
campestris –
Field Wood-rush

Field Wood-rush

- Loosely tufted
- Rhizomatous
- Flowers – 1
unstalked and 3-6
stalked clusters
- Anthers very long in
comparison to
filaments



Wood-rushes
Luzula
campestris –
Field Wood-rush

Field Wood-rush

- **Leaves – grass-like with long colourless hairs (look white)**



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Yellow flowers

- *Lathyrus pratensis* – Meadow Vetchling

Meadow Vetchling

- Scrambling
- Stems angled, not winged
- Each leaf with a pair of lanceolate (narrow oval and tapers to a point), grey-green leaflets



Yellow flowers

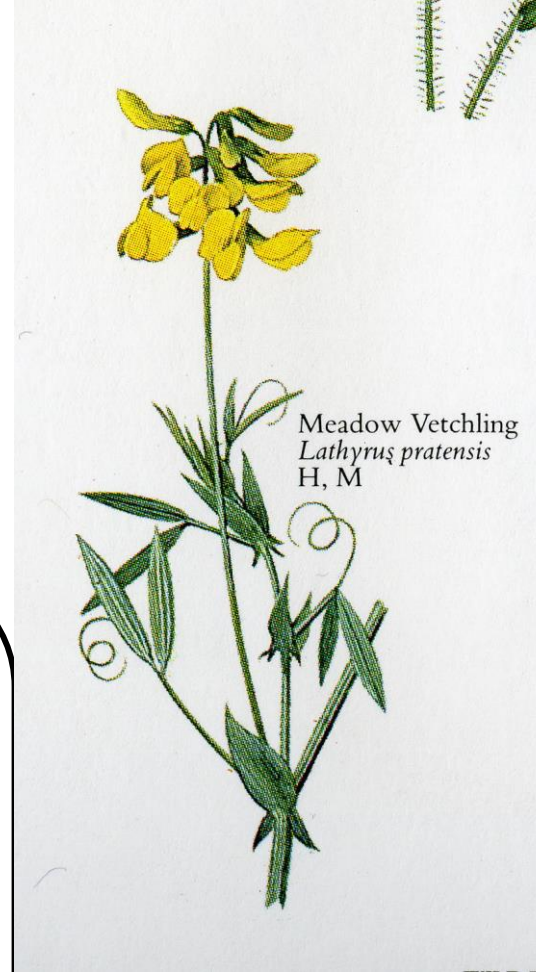
- *Lathyrus pratensis* – Meadow Vetchling

Meadow Vetchling

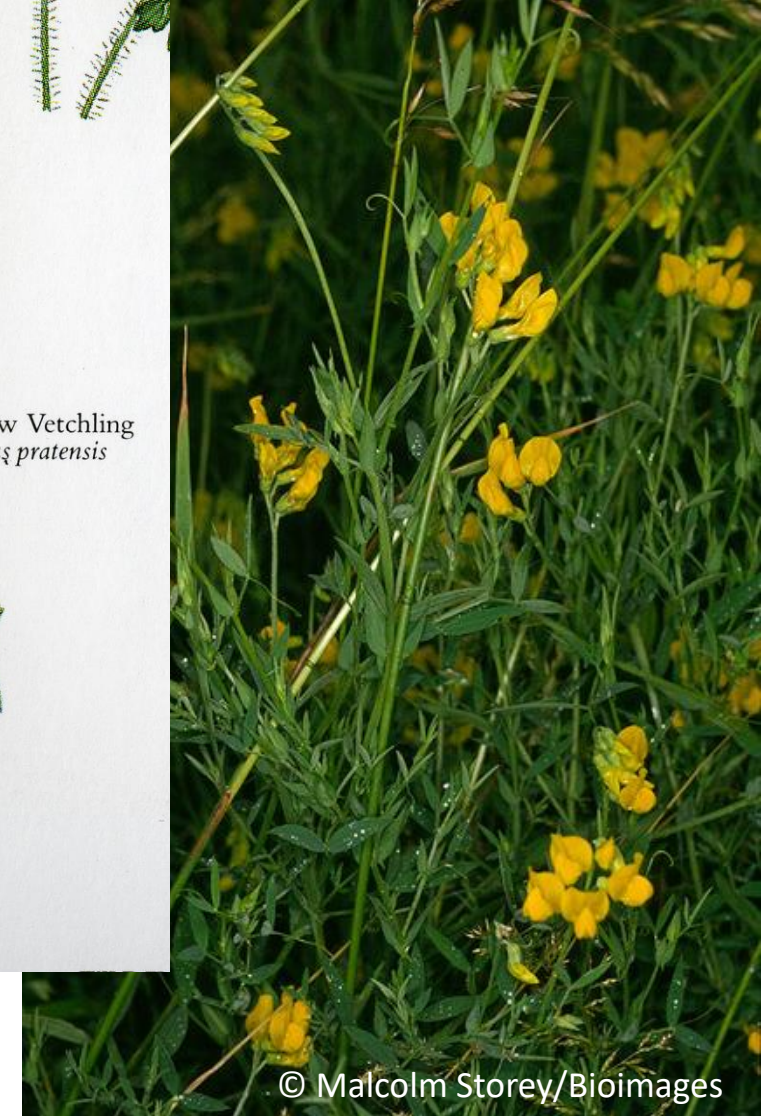
- Tendrils
- Stipules – leaf like and arrow-shaped

Meadow Vetchling

- Flowers – in racemes
- Flower stalks longer than leaves
- Yellow
- Pods – pea pod like and black when ripe



Meadow Vetchling
Lathyrus pratensis
H, M



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Yellow flowers

- *Medicago lupulina* –
Black Meddick

Black Meddick

- Downy/hairy
- Flower heads stalked, compact
- Leaves with mucronate tip
- Individual pod – kidney shaped and black when ripe



Yellow flowers

- *Medicago lupulina* – Black Meddick

Black Meddick

- Downy/hairy
- Flower heads stalked, compact
- Leaves with mucronate tip
- Individual pod – kidney shaped and black when ripe



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**White/Cream
Flowers**
Conopodium majus -
Pignut

Pignut

- **Carrot family (Cow Parsley, Hogweed, Wild Carrot)**
- **Woodland and grassland species**
- **Early flowerer**
- **Shorter than many in the family and generally delicate**



White/Cream Flowers

Conopodium majus -
Pignut

Pignut

- **Stem hollow after flowering**
- **Basal leaves often withering**
- **Leaves 2 times pinnate, but can look like 3 – deeply cut leaflets**

Pignut

- **Usually no bracts and only a few bracteoles**
- **Fruits – narrow, oval with beaks. Styles short and erect.**
- **Name given due to edible tubers underground.**



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If you need help with identification

- Take good photos
 - ❑ In focus
 - ❑ Of flowers, leaves, whole plant
- Make a note of how it was growing – was it creeping, erect, sprawling
- What was the rest of the vegetation like
- What were the growing conditions – was it dry, wet, bare ground, mossy?
- Time of year and location

