



Plants of Wildflower Meadows



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meadows**



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There are different types of grasslands. Some are very flower-rich, whilst others have more grasses.

Grasslands with one to nine plants per square metre are considered species-poor. They usually have a history of agricultural improvement by way of fertilisers or re-seeding with agricultural grass and legumes. Generally these grasslands are abundant with perennial rye-grass *Lolium perenne* comprising a large proportion of the grass sward.

Grasslands with nine to 15 species per square metre are considered moderately species-rich. Acid grasslands would fall into this category as there are a lower number of plants tolerant of these conditions.

Grasslands with 15 to 20+ species per square metre are considered to be species-rich. This includes many of the neutral and calcareous grasslands.

This guide will help you to identify some common grassland plants found in acid, neutral and alkaline soils.

Page	Common name	Scientific name	<input checked="" type="checkbox"/>
5	Betony	<i>Betonica officinalis</i>	<input type="checkbox"/>
6	Harebell	<i>Campanula rotundifolia</i>	<input type="checkbox"/>
7	Common knapweed or Black knapweed	<i>Centaurea nigra</i>	<input type="checkbox"/>
7	Greater knapweed	<i>Centaurea scabiosa</i>	<input type="checkbox"/>
9	Wood crane's-bill	<i>Geranium sylvaticum</i>	<input type="checkbox"/>
10	Sheep's-bit	<i>Jasione montana</i>	<input type="checkbox"/>
11	Field scabious	<i>Knautia arvensis</i>	<input type="checkbox"/>
12	Milkwort sp.	<i>Polygala</i> sp.	<input type="checkbox"/>
13	Selfheal	<i>Prunella vulgaris</i>	<input type="checkbox"/>
14	Devil's-bit scabious	<i>Succisa pratensis</i>	<input type="checkbox"/>
15	Wild thyme	<i>Thymus polytrichus</i>	<input type="checkbox"/>
16	Heath speedwell	<i>Veronica officinalis</i>	<input type="checkbox"/>
17	Common vetch	<i>Vicia nigra</i>	<input type="checkbox"/>
17	Bush vetch	<i>Vicia sepium</i>	<input type="checkbox"/>
19	Cuckooflower or Lady's-smock	<i>Cardamine pratensis</i>	<input type="checkbox"/>
20	Lousewort	<i>Pedicularis sylvatica</i>	<input type="checkbox"/>
21	Common sorrel	<i>Rumex acetosa</i>	<input type="checkbox"/>
21	Sheep's sorrel	<i>Rumex acetosella</i>	<input type="checkbox"/>

23	Great burnet	<i>Sanguisorba officinalis</i>	<input type="checkbox"/>
23	Salad burnet	<i>Poterium sanguisorba</i> <i>subsp. sanguisorba</i>	<input type="checkbox"/>
25	Ragged-robin	<i>Silene flos-cuculi</i>	<input type="checkbox"/>
26	Lady's bedstraw	<i>Galium verum</i>	<input type="checkbox"/>
27	Crosswort	<i>Cruciata laevipes</i>	<input type="checkbox"/>
28	Common rock-rose	<i>Helianthemum</i> <i>nummularium</i>	<input type="checkbox"/>
29	Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	<input type="checkbox"/>
30	Tormentil	<i>Potentilla erecta</i>	<input type="checkbox"/>
31	Meadow buttercup	<i>Ranunculus acris</i>	<input type="checkbox"/>
31	Bulbous buttercup	<i>Ranunculus bulbosus</i>	<input type="checkbox"/>
33	Yellow rattle	<i>Rhinanthus minor</i>	<input type="checkbox"/>
34	Oxeye daisy	<i>Leucanthemum vulgare</i>	<input type="checkbox"/>
35	Quaking grass	<i>Briza media</i>	<input type="checkbox"/>
36	Crested dogs-tail	<i>Cynosurus cristatus</i>	<input type="checkbox"/>
37	Wavy hair-grass	<i>Deschampsia flexuosa</i>	<input type="checkbox"/>
38	Glossary		

Betony

Betonica officinalis

Medium-sized plant, up to 60cm tall, with a basal rosette of long-stalked 3-7cm leaves. Each leaf edge is evenly lobed with blunt teeth all the way round. The red-purple flowers are around 15mm in length and have the typical asymmetrical shape of the dead-nettle family.



Soil type: Dry and damp, alkaline, neutral and acid loams.

Flowering period: June - September.

Grassland type: Calcareous, neutral and acid grasslands.

Harebell

Campanula rotundifolia

Slender, medium-sized plant, 10-40cm tall. The base leaves are rounded, whilst the stem leaves are fine and strap-like. One or more blue, bell-like flowers, 1.2-2cm long, hang from a slender stem on long thread-like stalks.



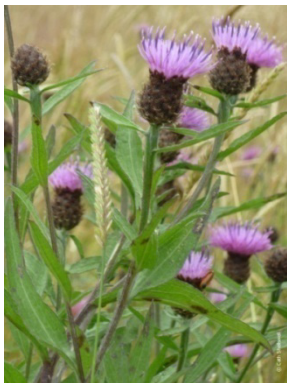
Soil type: Alkaline, neutral and acid dry loams and sands.

Flowering period: July - October.

Grassland type: Calcareous, neutral and acidic grasslands.

Common/Black knapweed *Centaurea nigra* and Greater knapweed *Centaurea scabiosa*

Common knapweed leaves are rough-haired, and have tiny projections around the edge, at regular intervals. The lower leaves have stalks, but the upper ones are stalkless. Deep purple flowers are 2-4cm across, and thistle-like. Two forms of flower are recognised i) those with an outer-ring of florets that have extended 'rayed' petals, and ii) flowers without 'rayed' florets.



The leaves of greater knapweed are stalked and deeply lobed, divided most of the way to the central leaf vein. The upper leaves are stalkless but remain deeply divided. Greater knapweed has 3-6cm deep-purple flowers and the outer rim of florets have large 'rayed' petals.



Soil type: Alkaline, neutral and acid dry loams and sands.

Flowering period: July - October.

Grassland type: Calcareous, neutral and acid dry grasslands.



► Common knapweed leaf with small projections around the edge



► Deeply lobed greater knapweed leaf

Wood crane's-bill

Geranium sylvaticum

Hairy herb, 30-80cm tall. The leaf lobes are 1.5-2 times as long as wide, and are deeply-divided into 5-7 segments with blunt teeth along the edge. Reddish-pinkish-violet flowers are 10-15mm across. Wood crane's-bill is an indicator plant of upland hay meadows.



Soil type: Neutral loams.

Flowering period: June - July.

Grassland type: Neutral grasslands.

Sheep's-bit

Jasione montana

Downy herb that may grow as a single plant or in tufts 5-30cm tall. The rosette leaves are short stalked and strap-shaped with a wavy-edge. Stalkless stem leaves, similar to the rosette leaves, start at 5cm long close to the stem base, but get progressively shorter up the stem. The rounded flower heads are 10-30mm across and have a dense number of pale to deep blue florets.



Soil type: Acid dry loams and sands, often coastal.

Flowering period: May - August.

Grassland type: Acid grasslands.

Field scabious

Knautia arvensis

Stout plant with a stem 15-70cm tall, and rough-haired all over. The leaves that form the basal rosette are elliptical with blunt teeth, whilst those further up the stem are deeply divided, with elliptical terminal leaflets. The blue-violet flower heads are 3-4cm wide and the petals of each floret are slightly uneven, with the outside rim florets appearing slightly 'rayed'.



Soil type: Dry, neutral and alkaline loams.

Flowering period: June - September.

Grassland type: Neutral and calcareous grasslands.

Milkwort sp.
Polygala sp.

Milkworts are low-growing, hairless herbs, with alternately narrow-lanceolate leaves. Some species have basal rosettes of elliptical leaves. The normally blue irregularly shaped flowers have two large sepals that act as petals, which form an inner, very small, whitish fringed-tube. The sepals are coloured purple, mauve, pink or white.



Soil type: Neutral, alkaline and acid loams.

Flowering period: May - September.

Grassland type: Neutral, calcareous and acid grassland.

There are four species. Common milkwort in neutral grassland, chalk milkwort and dwarf milkwort (Kent, South Downs and Yorkshire only) in calcareous grassland, and heath milkwort in acid grassland.

Selfheal

Prunella vulgaris

A slightly hairy, low-growing herb, up to 20cm tall. The stalked leaves are oval-shaped. The asymmetrical purple flowers are typical of the dead-nettle family, with a hooded upper lip and three lobes on the lower lip.



Soil type: Neutral and alkaline dry and damp soils.

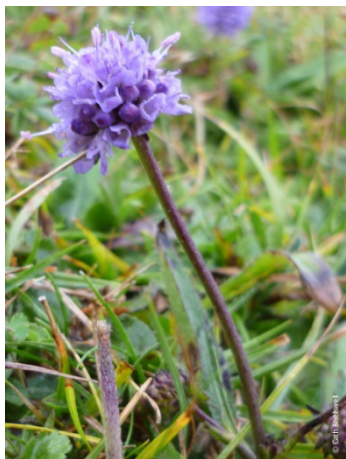
Flowering period: June - October.

Grassland type: Neutral and calcareous grasslands.

Devil's-bit scabious

Succisa pratensis

Stout plant with a stem 15-70cm tall, roughed-haired all over. The leaves that form the basal rosette are elliptical, with no teeth or tiny projections (otherwise similar to common knapweed). The stem leaves are narrower. The deep blue-violet flower heads are 1.5-2.5cm wide and the petals of each floret are even (the outside rim florets are not 'rayed').



Soil type: Neutral, acid and alkaline dry and damp soils.

Flowering period: June - October.

Grassland type: Neutral, acidic and calcareous grasslands.

Wild thyme

Thymus polytrichus

A mat-forming herb, faintly thyme scented, up to 20cm tall. Small oval-elliptical leaves are arranged in opposite pairs. The branched stems are four angled, with hairs on two opposite faces and hairless on the other two. The asymmetrical flowers have a hooded top lip and the lower lip is three-lobed. The flowers are a purple-mauve colour.



Soil type: Dry alkaline loams.

Flowering period: May - August.

Grassland type: Calcareous grasslands.

Heath speedwell

Veronica officinalis

Creeping, hairy, mat-forming plant, up to 15cm tall. Oval leaves are 1-2cm long and shallowly toothed. The lower leaves on the flowering stem have stalks, but those further up are stalkless. The lilac-coloured flowers are at the top of the stem and about 6mm wide. They open from the bottom to the top. The seed pods are classically heart-shaped, similar to other speedwells.



Soil type: Acid loams.

Flowering period: May - August.

Grassland type: Acid grasslands.

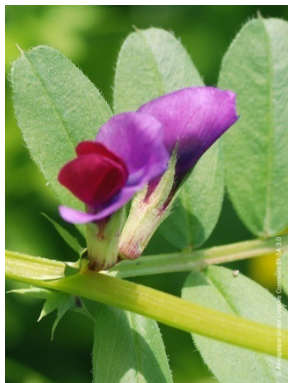
Common vetch and Bush vetch

Vicia nigra *Vicia sepium*

Both plants are members of the pea family. They can climb and scramble up to 50cm. They have leaves made-up of opposite pairs of leaflets, with tendrils. Underneath the stipules, at the base of each leaf, is a dark spot.

Common vetch has 4-8 pairs of elliptical leaflets, with the widest part half-way along. The pea flowers are bright pink or purple, and the calyx tube has almost equal teeth.

Bush vetch has 3-9 pairs of egg-shaped leaflets. The pea flowers are a dull pink-purple and the lower calyx teeth are longer than those at the top.



Soil type: Neutral loams.

Flowering period: April - September.

Grassland type: Neutral grasslands.



▼ Bush vetch
egg-shaped leaf

► Common
vetch oval
leaf



Cuckooflower or Lady's-smock

Cardamine pratensis

An upright flower, growing to 60cm. The lower leaves form a rosette, with large rough leaflets up the length of the stem vein and a larger terminal kidney-shaped leaf. The stem leaves are strap-like. The four-petalled flowers are rose-pink to white and each is 12-18mm across.



Soil type: Alkaline, neutral and acid damp but well-drained loams.

Flowering period: April - June.

Grassland type: Acidic and neutral grasslands.

Lousewort

Pedicularis sylvatica

This is a many-stemmed plant 10-20cm tall, and forming mats. Leaves 2-3cm in length are arranged alternatively up the stem. They have a central mid-rib, with deeply divided, small leaf lobes along each side. The pink asymmetrical flowers have two teeth on the upper hooded petal and the lower petal is three-lobed.



Soil type: Damp acid loams.

Flowering period: April - July.

Grassland type: Acidic grassland.

Common sorrel and Sheep's sorrel

Rumex acetosa and *Rumex acetosella*

Slender members of the dock family, up to 80cm tall. The shiny green leaves are arrow-shaped and may be 10cm long.

Common sorrel has spear-shaped leaves, with two tails pointing back down the leaf stem.

Sheep's sorrel is hastate-shaped leaves with, two points facing outwards at the base of the leaf creating a triangular shape.

The small reddish flowers are arranged along branches at the top of the stem.

Both herbs have a lemony taste.



Soil type: Common sorrel is present on neutral soils, whilst sheep's sorrel is found on acid loams.

Flowering period: Common sorrel flowers in May-June and sheep's sorrel in May-August.

Grassland type: Common sorrel occurs in neutral dry and damp soils. Sheep's sorrel on dry acidic grasslands.



◀ Common
sorrel leaf



▼ Sheep's
sorrel leaf

Great burnet

Sanguisorba officinalis

and

Salad burnet

Poterium sanguisorba
subsp. *sanguisorba*

Hairless herbs, up to 1m tall for great burnet, and 15-40cm tall for salad burnet.

Both plants have basal rosettes of leaves, with opposite-paired oval toothed leaflets, ending in a terminal leaflet. Stem leaves are similar but smaller.

Great burnet has oblong flower heads, 1-2cm long with lots of small flowers that are dull crimson in colour.

Salad burnet flowers are round globular heads, with two tiny, red-purple feathery stigmas. They sit in green-purplish sepals that resemble petals. Crushed leaves of salad burnet smell and taste of cucumber.





◀ Great burnet leaf

◀ Salad burnet leaf

Soil type: Great burnet is present in neutral wet soils. Salad burnet is in alkaline soils.

Flowering period: Great burnet flowers in June - September. Salad burnet in June - August.

Grassland type: Great burnet grows in wet neutral grasslands. Salad burnet in dry calcareous grasslands.

Ragged-robin

Silene flos-cuculi

Tall, branched plant, up to 70cm. Simple spear-shaped, hairless, green leaves are arranged opposite each other up the stem; progressively getting smaller. Star-shaped, pink flowers with five deeply-divided petals. Although this plant is a member of the campion/catchfly family, it is not sticky.



Soil type: Alkaline, neutral and acid damp loams.

Flowering period: May - August.

Grassland type: Calcareous, neutral and acidic grasslands.

Lady's bedstraw

Galium verum

A creeping, sprawling plant with hairless stems, between 15-60cm long. It has 8-12 fine, linear leaves in whorls along the stem. Each dark-green leaf has a single vein and is 6-25mm long by 0.5-2mm wide. The small 2-3mm golden-yellow flowers grow at the ends of the stems.



Soil type: Neutral and alkaline dry loams.

Flowering period: May - June.

Grassland type: Neutral and calcareous grasslands.

Crosswort

Cruciata laevipes

A spreading plant, growing between 15-60cm tall. It is a member of the bedstraw family and has whorls of four elliptical-leaves, forming crosses up the stem. Each yellow-green leaf has three veins, is hairy and can grow up to 2.5cm in length. Yellow, honey-scented flowers grow on short stalks from the leaf axils.



Soil type: Neutral and alkaline dry and damp soils.

Flowering period: May - June.

Grassland type: Neutral and calcareous grasslands.

Common rock-rose

Helianthemum nummularium

A low-growing shrub that covers ground in small mats. The thick woody stem and branches (5-30cm in length) have small 0.5-2cm leaves. These have a few hairs on the upper surface, but are white-woolly below. The bright yellow flowers are 2-2.5cm across and have five crinkly petals.



Soil type: Alkaline to neutral dry loams.

Flowering period: May - September.

Grassland type: Calcareous to neutral grassland.

Common bird's-foot-trefoil

Lotus corniculatus

A creeping, mat-forming plant with solid stems, 10-40cm long. The leaflets are oval. At the base of each leaflet stalk are two oval-shaped sepals. The typical pea-shaped flowers are 15mm long with deep-red flattened buds opening to deep-yellow asymmetrical flowers that can be tinged orange-red. The long straight seed pods look like a bird's foot.



Soil type: Neutral to alkaline dry and damp soils.

Flowering period: May - September.

Grassland type: Neutral to calcareous grassland.

Tormentil

Potentilla erecta

Creeping herb, with stems up to 10cm long. Shiny deep-green stalkless leaves are hairless above and silky below. There are three leaflets clustered together, with two sepals on the stem, which makes each leaf appear digitate. Leaflets are obovate and deeply-toothed. The flowers have four yellow petals on a long stalk 2-4cm in length, 7-11mm in diameter.



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Soil type: Acidic soils.

Flowering period: June - September.

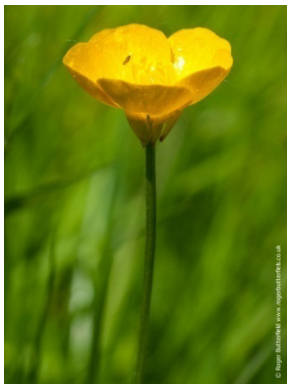
Grassland type: Acid grassland.

Meadow buttercup *Ranunculus acris* and Bulbous buttercup *Ranunculus bulbosus*

These buttercups are typical of the family, growing up to 100cm tall for meadow buttercup, and 40cm for bulbous buttercup. Both have five-petalled, bright-yellow flowers.

Meadow buttercup leaves are deeply dissected with three to five lobes that look like separate strips of leaf. The sepals behind the flower are spreading.

Bulbous buttercup leaves have three deeply dissected lobes. The sepals are bent back on themselves. Bulbous buttercups have a swollen bulbous base.



Soil type: Meadow buttercup is present in neutral and alkaline damp soils. Bulbous buttercup in neutral and alkaline dry soils.

Flowering period:
Meadow buttercup flowers in May - August. Bulbous buttercup in April - June.

Grassland type:
Neutral and calcareous grasslands.



▲ Meadow buttercup plant and leaf

► Bulbous buttercup plant and leaf



Yellow rattle

Rhinanthus minor

An annual plant, up to 50cm. The stems can have black spots. The spear-shaped leaves with small teeth are arranged in opposite pairs up the stem. The yellow flowers sit in an inflated bladder-like calyx. The asymmetrical flowers have petals joined together into a tube. The hood has two short violet teeth. Yellow rattle is hemi-parasitic on grasses.



Soil type: Neutral and alkaline dry and damp soils.

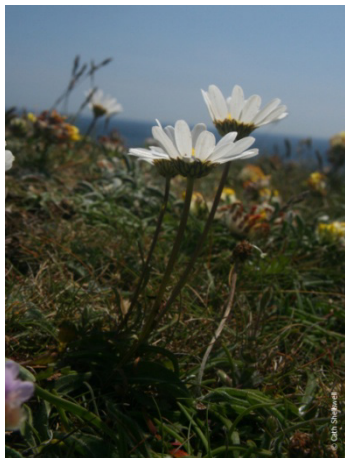
Flowering period: May - August.

Grassland type: Neutral and calcareous grasslands.

Oxeye daisy

Leucanthemum vulgare

Tall, slightly hairy plant, up to 70cm tall. A basal rosette of dark-green, spoon-shaped, long-stalked leaves is present and the dark-green toothed stem leaves are stalkless and clasp the stem. The flower head is a typical large daisy, 2.5-6cm across. The outside florets have white ray petals, and the inner disc florets yellow petals.



Soil type: Neutral and alkaline dry and wet loams.

Flowering period: May - September.

Grassland type: Neutral and calcareous grasslands.

Quaking grass

Briza media

Loosely-tufted grass, up to 80cm tall. The ligule is short, 0.6-2.1mm long. Each plant produces flowering stems with lots of spikelets, much like branches on a tree. The characteristic flowers are triangular in shape. This grass cannot be confused with other grasses except close relatives such as greater quaking grass (garden ornamental) and lesser quaking grass (annual in arable habitat).



Soil type: Alkaline to neutral well-drained loams.

Flowering period: June - mid-August.

Grassland type: Calcareous and neutral grasslands.

Crested dogs-tail

Cynosurus cristatus

A tufted grass, up to 80cm tall. The ligule at the base of each leaf is a short membranous rim, 0.5-2mm long. Each flower head is between 3-10cm long. The flowers are all attached to the stem on one side giving a characteristic smooth side to the spike and rough side.



Soil type: Neutral to alkaline well-drained and damp loams.

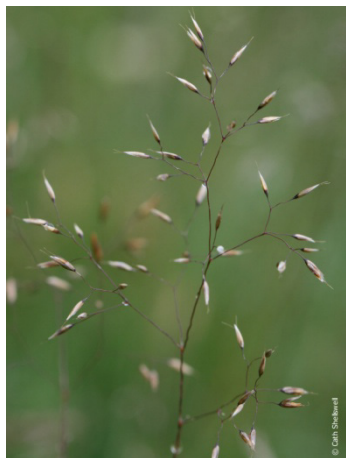
Flowering period: June - August, with flowering to September and early October in exceptional years.

Grassland type: Neutral and calcareous grasslands.

Wavy hair-grass

Deschampsia flexuosa

A tufted grass, up to 80cm tall. Long leaves are tightly-rolled and bristle-like. It has blunt ligules 1.5-3.5mm long. The two-flowered spikelets are silvery tinged with purple or brown. Each flower has a bristle-like awn (stiff hair) projecting above the flower. This plant often forms large swathes, which are slightly iridescent when blown in a breeze.



Soil type: Well-drained and damp acid loams.

Flowering period: May - mid-August.

Grassland type: Acidic dry and wet grasslands.

Glossary

Basal rosette - the leaves at the bottom of the stem that encircle the flowering spikes growing upwards from the middle.

Digitate leaf - a palmate leaf, the leaflets of which are narrow and finger-like.

Hastate - triangular shaped, with two outwards projecting points at the base of the leaf. Termed after a late medieval pike-head known as a 'Halberd'.

Hemi-parasitic - partially parasitic, but can also produce sugars using chlorophyll.

Ligule - the little transparent flap or group of hairs at the junction of a grass leaf with the stem.

Obovate leaf - an oval-shaped leaf.

Rayed - strap-shaped spreading florets, with a longer petal, and occurring around the edge of a flower head or throughout a flower-head.

Sepal - One of the outer whorl of floral leaves (usually green), that surround the petals of a flower. A calyx is the collective name for a whorl of sepals, and a calyx-tube is when the sepals are fused together. The sepals may only be fused halfway along the length and ending in projections, termed teeth. These may be equal, meaning all ending at the same point, or unequal, with some teeth longer than others.

Stipule - a leaf- or scale-like appendage at the base of a leaf-stalk; often occurs in a pair.

Strap-shaped - flat, parallel-sided and blunt-ended shape.

Terminal leaflets - in a group of leaves, the one at the end of the leaf stem.

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