



The Royal Society of Biology: **The UK's favourite flower poll**



Flower factfiles



The RSB flower poll 2018 shortlist

Why did we pick these flowers for our shortlist?

The flowers chosen due to their wide distribution across the UK and their prevalence as household names and symbols.

They were also selected due to their ability to grow in the wild, meaning that they can, and often do, grow in habitats where they were not intentionally planted, and can cope with the local conditions and environment.

The shortlisted flowers are also common country walk favourites and are readily available as cultivated plants or seeds raised from seed sustainably collected in the UK.

Our shortlisted species are:

Primrose
Lily of the Valley
Dog rose
Bluebell
Foxglove
Honeysuckle
Common Daisy
Snowdrop

Primula vulgaris
Convallaria majalis
Rosa canina
Hyacinthoides non-scripta
Digitalis purpurea
Lonicera periclymenum
Bellis perennis
Galanthus nivalis

Common poppy
Meadow buttercup
Daffodil (wild)
Scotch Thistle
White clover
Cornflower
Sunflower

Papaver rhoeas
Ranunculus acris
Narcissus pseudonarcissus
Onopordum acanthium
Trifolium repens
Centaurea cyanus
Helianthus annuus

Using these factfiles

Each flower that features in the poll has its own factfile, detailing a number of facts about each plant, including habitat, soil preference, pollination and more.

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Primrose

Primula vulgaris

Family	Primulaceae
Size	10-30 cm high
Colour	Pale yellow with dark orange centres, with five notched petals
Habitat	Open woodland and grassland, hedgerows
Soil	Moist and humus rich
Flowering months	February-April
Life cycle	The primrose is biennial, with wild plants shedding their seed during the Autumn months. These seeds go dormant until conditions are right for germination, and they may remain dormant for years. They sprout in spring and flower in summer.
Pollination	The primrose self-pollinates, so each generation is genetically identical to the last.
Seed dispersal	Dispersed by ants and rodents, which are attracted by oils in the seed coats.
Associated species	Provides nectar for butterflies. Vine weevils eat primrose roots as grubs and leaves as adult.

In some regions of Britain, primroses are used as woodland indicator species -- a woodland has to be older than 400 years to be classed as an ancient woodland, and it takes around this long for certain flora species to colonise, including the primrose, honeysuckle, and some species of orchid.

Over collection and theft led to the taking of primrose plants from the wild becoming illegal in the UK Wildlife and Countryside Act 1981.



Lily of the Valley

Convallaria majalis

Family	Asparagaceae
Size	Up to 20cm tall
Colour	White and bell-shaped
Fruit	Red poisonous berries
Habitat	Dry shaded woodland and even limestone pavements
Soil	Calcareous and alkaline soils
Flowering months	May to June
Life cycle	Perennial. After sprouting in spring, the plant forms large, interconnected colonies by spreading underground stems known as rhizomes.
Pollination	Lilies are self-sterile: they will not produce seeds if their own pollen is placed on their stigma. They can only be pollinated by pollen carried from other plants by insects.
Seed dispersal	By birds that eat their red berries.
Associated species	Some butterfly larvae, and often fed on by the leaf beetle as they can tolerate the toxic chemicals found in the flower's leaves. Bees and butterflies are

The Lily of the Valley is highly poisonous, and eating its leaves can cause vomiting, reduced heart rate and blurred vision.

The Lily of the Valley was awarded the Royal Horticultural Society's Award of Garden Merit, based on an assessment of the plant's performance under UK growing conditions, as it is very suited for growth across the UK.



Dog rose

Rosa canina

Family	Rosaceae
Size	1-5m tall
Colour	White through to deep pink large, five petalled flowers with a faint, sweet smell
Fruit	Red oval shaped hips that develop in autumn, which form in small clusters
Habitat	Hedgerows, woodland edges and on scrubland, in both sun and shade
Soil	Suited to many kinds of soils, except soil which is nutrient poor or very acidic
Flowering months	June to July
Life cycle	Perennial - they grow and bloom over spring and summer, and then die back in autumn. They can grow from seed over many years.
Pollination	Aided by butterflies and bees, but can self-pollinate in wet weather.
Seed dispersal	Dispersed by birds and other animals that eat the hips.
Associated species	Pests include rose aphids (<i>Macrosiphum rosae</i>), which feed on plant sap, beetles, mites and bees that all feed on leaves.

The dog rose is the county flower of Hampshire, and is considered to be the rose of medieval European heraldry.

Its fruit (rose hips) has a higher level of vitamin C than orange juice and is high in certain antioxidants. Some people use the flower to make syrup, tea, marmalade or rose-hip syrup. The hairs inside the hips are an irritant sometimes extracted to make an itching powder.

The dog rose is considered an invasive species in the high country of New Zealand.



Bluebell

Hyacinthoides non-scripta

Family	Asparagaceae
Size	Up to 50cm tall
Colour	Violet through to blue
Habitat	Deciduous woodland, hedgerows
Soil	Slightly acid soil
Flowering months	April to June
Life cycle	Perennial, bulbous. They spend most of the year as bulbs underground and emerge to flower from April onwards. This early flowering is to take advantage of the sunlight that can still reach the woodland floor before the canopy fully grows.
Pollination	Popular with bumblebees.
Seed dispersal	These are dropped from the flower head directly onto the ground.
Associated species	Bees, hoverflies, butterflies and other insects feed on the bluebell flowers, which provide an important early source of nectar. They also are a host species for the fungus <i>Uromyces muscari</i> , which causes bluebell rust.

The UK is home to up to 50% of the world's *H. non-scripta* population, and it is the flower of St George, England's patron saint.

Bluebell sap was used to bind pages into the spines of books, and during the Bronze Age people used bluebell to set feathers in arrows. Bluebells also synthesise at least 15 biologically active compounds that are thought to protect them against plants and animals.



Foxglove

Digitalis purpurea

Family	Plantaginaceae
Size	1-2m tall, flowers 3-5cm long
Colour	Pink, purple, white
Fruit	A capsule encompassing many seeds, which changes colour from green to black when ripening.
Habitat	Woodland clearings, gardens, and hedgerows in partial sunlight or shade.
Soil	Slightly acidic
Flowering months	June to September
Life cycle	The foxglove is biennial: during the first year primary growth occurs with a basal rosette of leaves, whilst in the second year flowers blossom with secondary stem growth.
Pollination	Bees, especially those with long tongues, can reach up the length of the flower.
Seed dispersal	Each plant produces thousands of tiny seeds that are dispersed by the wind.

Foxgloves were the original source of digoxin, a heart medicine that can be used to treat a number of heart conditions. Leaves, flowers and seeds are fatally toxic to humans and some animals.

It is the county flower of Argyll, the West Midlands and Monmouthshire.

Folk myths suggest foxes wore the flowers on their paws to silence their footsteps to hunt prey.



Honeysuckle

Lonicera periclymenum

Family	Caprifoliaceae
Size	4-8m tall, but can spread up to 2.5 metres wide
Colour	Yellow, white, red, pink
Fruit	Bright berries
Habitat	Hedgerows, climber, enjoy full sun or partial shade
Soil	Fertile, humus rich, moist and well-drained soil
Flowering months	June to September
Life cycle	Deciduous perennial. Climbers flower in the summer, and shrubs flower in late winter, spring or summer.
Pollination	They are able to self-pollinate, but often are pollinated by moths or long tongued bees. Flowers become yellow once they are pollinated.
Seed dispersal	Dispersed by animals that eat their berries
Associated species	New shoots are vulnerable to aphid attacks

The honeysuckle produces most scent at twilight to attract more pollinating moths. Honeysuckle is often used to cover walls and fences.

Their berries are not edible, and should be avoided as they may cause nausea.

The honeysuckle is the County flower of Warwickshire.



Common Daisy

Bellis perennis

Family	Asteraceae
Size	Up to 15cm tall, flowers 2-3cm wide
Colour	White/pink with yellow central disc known as a capitulum (a flat cluster of florets)
Habitat	Grassland, meadows, towns and gardens
Soil	Most well-draining soils
Flowering months	June to August, but can appear all year round
Life cycle	The Common Daisy is a herbaceous perennial plant, and blooms from early midsummer.
Pollination	Mainly self-pollinated, although cross pollination can occur.
Seed dispersal	Carried by a combination of wind, rain or even attaching to animal fur.

Daisies are thought to have medicinal properties including easing coughs, treating wounds and bruises, slowing bleeding and relieve indigestion.

Daisies are found everywhere on Earth except Antarctica, but because they thrive in inhospitable conditions, are often considered weeds. 38 plant species spread across 22 genera have common names that include the word “daisy,” but all daisy species are members of the family Asteraceae and produce daisylike, composite flowers.

Each ‘petal’ is actually an individual flower as Common Daisies have composite flower heads, made up of lots of tiny flowers.

The Common Daisy is traditionally used to make daisy chains.



Snowdrop

Galanthus nivalis

Family	Amaryllidaceae
Size	7-15cm tall, flowers 1-3cm long
Colour	White, pale green
Fruit	Small, fleshy, spherical and green
Habitat	Hedgerows, woodland edges and on scrubland, in both sun and shade
Soil	Chalk, clay, loamy and damp
Flowering months	January to March
Life cycle	Perennial, and grow from bulbs. Snowdrops start to grow roots in the autumn, and in spring, leaves and flowers develop. During spring and summer, they begin to store food in their bulbs again for the next year.
Pollination	Mainly insect- and cross-pollinated, self-pollination can occur.
Seed dispersal	Ants distribute the seeds, which emit chemicals that attract them to the plant. Bulbs also may be distributed by animals, if dug up.

Early emerging Queen bumblebees may also spread snowdrop seeds when the weather warms up.

Snowdrop collectors are known as galanthophiles.

Snowdrops contain galantamine, which researchers are using to develop potential treatments for Alzheimer's disease.

The snowdrop is considered native, but was only first recorded in the wild in the UK in 1778.



Common poppy

Papaver rhoeas

Family	Papaveraceae
Size	Up to 70cm in height, flower 5-10cm diameter
Colour	Red with a black base of petals
Habitat	Fields and grasslands
Soil	Sand, clay, loam
Flowering months	May to October
Life cycle	Annual: the seedlings appear in spring, first forming a bud which then opens into the flower. Once pollinated, the petals drop off and a hard capsule remains that contains the seeds of the plant.
Pollination	Poppies are visited by a large range of insects for cross-pollination, although self-pollination can also occur.
Seed dispersal	The seeds are released through pores at the top of a capsule that scatters the tiny seeds widely when caught in the wind. The seeds can remain dormant for up to eighty years.

The poppy is the county flower of Essex and Norfolk and in Roman times the flower was sacred and associated with the goddess of agriculture.

Poppy seeds are released when the flower is disturbed, hence the abundance between trench lines in World War I. Following the publication of the poem 'In Flanders Fields' written by a Canadian volunteer medical officer in Ypres during the winter of 1915, the practice of wearing poppies to commemorate Armistice Day became popular.

A study on pollen production in UK meadows found that *Papaver rhoeas* poppies produce more pollen than any other plant. Their seeds are also edible, and oil made from the seeds is popular in France.



Meadow buttercup

Ranunculus acris

Family	Ranunculaceae
Size	Up to 1m tall, flowers 2-3cm diameter
Colour	Yellow
Habitat	Meadows, damp soil, pastures
Soil	Clay-like, calcareous and moist
Flowering months	April to September
Life cycle	Perennial: flowering lasts for two months, before seeds ripen and shed. In June, the first fruits appear, with peak fruiting occurring in mid-August, and each flower head containing around 30 seeds. Buttercups spend the winter months as a rosette of small leaves, with seedlings emerging from January to April.
Pollination	Various pollinator species, most populations are insect pollinated, but some populations are self-sterile.
Seed dispersal	Seeds tend to fall off the parent plant directly into soil below.

Buttercups are connected under the surface by a short creeping rhizome (root network), that remains at the base of the leaves of the plant. The rhizome is densely packed with starch and branches out in autumn to produce new shoots, hence why buttercups appear in clusters.

Due to its persistence as a weed in old, permanent grassland, the abundance of buttercup is considered an indicator of the age of the pasture it is found on, and is found up to 4,000ft above sea level in the UK.

The plant is thought to be native to Alaska and Greenland, but has been widely introduced across the world.



Daffodil (wild)

Narcissus pseudonarcissus

Family	Amaryllidaceae
Size	Up to 35cm tall, flowers 4-6cm diameter
Colour	Yellow
Habitat	Woodland clearings, meadows and fields, and enjoy sun or light shade
Soil	Sand, chalk or clay soil
Flowering months	March to April
Life cycle	<p>Daffodils reproduce either by producing seeds or bulbs. Seeds can be generated though cross-pollination, but it can take as long as seven years for a daffodil to grow from seed.</p> <p>More often daffodils asexually reproduce by splitting their bulbs into bulblets or developing small bulbs called bulbils on their stems.</p> <p>Bulbs are planted in autumn, ready for producing shoots in spring.</p>
Pollination	Daffodils can self-fertile, but may be fertilised by the wind or insects
Seed dispersal	Their small black seeds disperse via the wind
Associated species	Narcissus flies, mites and moths are among the pests that destroy daffodils from the inside of the bulb outwards, or by making holes in the outer bulb.

The daffodil is the national flower of Wales, and the county flower of Gloucestershire. The bulbs contain the poison lycorine, so are not safe to eat.

Wild populations are declining due to an increase in agricultural land and habitat mismanagement, although populations remain strong in western UK.



Scotch Thistle

Onopordum acanthium

Family	Asteraceae
Size	Up to 3m tall, flowers 2-6cm diameter
Colour	Dark pink, purple, lavender
Habitat	Dry grasslands, meadows
Soil	Sandy, clay or loam
Flowering months	July to October
Life cycle	Biennial; the plant germinates in autumn when rainfall increases after the summer months, and in the first year produces a rosette of spiny leaves. In the second year, the plant grows taller and produces flowers in the summer months. After pollination, the ovary of the plant swells and produces between 8,000 and 40,000 seeds.
Pollination	Self- and cross-pollinated
Seed dispersal	Wind dispersal
Associated species	The leaves provide food for some caterpillars, including the thistle ermine (<i>Myelois circumvoluta</i>).

The Thistle is the national flower of Scotland, but is native to most of Europe and Western Asia.

Seeds that germinate in autumn under ideal conditions will behave as biennial, but should they germinate earlier, they can behave as annual plants. Buried seeds can remain viable for years after scattering.



White clover

Trifolium repens

Family	Fabaceae
Size	Up to 7cm tall, flowers 1-2cm diameter
Colour	White and pink
Habitat	Grasslands and meadows
Soil	Sandy, clay or loam, or low fertility soils
Flowering months	July to September
Life cycle	Clover is a short-lived perennial which grows rapidly and spreads via stolons -- above-ground stems that allow for plants to asexually reproduce. Most of their growth takes part in Spring, and will flower from August through to January.
Pollination	Cross pollinated by bees
Seed dispersal	Via animals that eat the clover

The plant is identifiable by its white flowers and its trifoliate leaflets, known to some as the shamrock.

Shamrocks, a common symbol associated with Ireland, are considered to be either *Trifolium repens* or *Trifolium dubium*, although some other three-leaved plants are commonly referred to as shamrocks.

Different botanists over the years have tried to determine which species is considered to be the “true” shamrock: even Carl Linnaeus, considered to be the father of modern taxonomy, was unable to choose between species.

Although found commonly with three leaflets, they may sometimes appear with four (or even more!), which are considered to be lucky.



Cornflower

Centaurea cyanus

Family	Asteraceae
Size	40-90cm tall, flowers 1-3cm diameter
Colour	Blue
Habitat	Hedgerows or any sunny spot
Soil	Sandy, well draining
Flowering months	June to August
Life cycle	An annual plant, although seeds can remain viable for years until soil disturbance. They are also very hardy, and can be sown very early in spring and will develop strong roots during the cooler months.
Pollination	Hymenoptera (specifically <i>Apis</i> and <i>Bombus</i> sp.) are popular pollinators.
Seed dispersal	The flower drops seeds into the soil below.

Cornflowers were found in Tutankhamun's tomb and are thought to be over 3,000 years old. They are considered to be a symbol of remembrance in France, and are also its national flower, although they are native to the UK.

Dried, the flowers are used as medicines to treat digestive and menstrual illnesses.

Cornflowers are declining in the UK due to agricultural practices and competitive crops, and they were named as a priority species under the UK Post-2010 Biodiversity Framework.



Sunflower

Helianthus annuus

Family	Asteraceae
Size	Up to 3m tall, with the “flower” head (pseudanthium or composite flower of numerous florets) up to 40cm diameter
Colour	Yellow
Habitat	Fields and other open spaces where they can enjoy full sunlight
Soil	Will tolerate most soil, from slightly acidic to slightly alkaline
Flowering months	August to September
Life cycle	<p><i>Helianthus annuus</i> is an annual plant (although some sunflowers are perennial) that germinate quickly after planting in spring. They flower in the summer months. Once the outer petals of the sunflower open, the florets in the centre disk expand and begin to scatter pollen.</p> <p>After the florets are pollinated, the seeds then form underneath.</p>
Pollination	Frequent pollinators include Coleoptera, in particular spotted maize beetles, and sunflowers are very popular with many bee species.
Seed dispersal	Seeds are eaten by birds and other animals and dispersed, or may just drop onto the soil below.

A mathematical model of the pattern of florets was proposed relating to the golden ratio, to fit the optimum number of florets in the head.

Sunflower seeds are used in a variety of foods, including those for birds, and in cooking. Sunflower oil is extracted from the seeds and the remaining cake is used as livestock feed. The seeds are rich in vitamins and minerals, and contain linoleic acid, an essential fatty acid in human nutrition.

Further reading

More sources of information on UK flora

The Woodland Trust
www.woodlandtrust.org.uk

The Royal Horticultural Society
www.rhs.org.uk

Royal Botanic Gardens Kew
www.kew.org

Eden project
www.edenproject.com

UK Plant Sciences Federation
<http://www.plantsci.org.uk/>

The British Society for Plant Pathology
<http://www.bspp.org.uk/>

GARNet
<https://www.garnetcommunity.org.uk/>

Importance of native species

Royal Botanic Gardens Kew on meadow habitats and their importance
<https://www.kew.org/blogs/in-the-gardens/why-meadows-matter>

Wild-flowers and invertebrate conservation

Haaland et al (2011) Sown wildflower strips for insect conservation: a review
<https://doi.org/10.1111/j.1752-4598.2010.00098.x>

Feltham et al (2015) Experimental evidence that wildflower strips increase pollinator visits to crops
<https://doi.org/10.1002/ece3.1444>

Threats to native flower species

Charity Plantlife's article on threats to plant species and their habitats on road verges
www.plantlife.org.uk/uk/blog/road-verges-are-a-refuge-for-some-of-our-rarest-plants

Fauna & Flora International on threats to flower habitats
www.fauna-flora.org/environments/wild-flower-habitats

Nicolson and Wright (2017) Plant-pollinator interactions and threats to pollination
<https://doi.org/10.1111/1365-2435.12810>

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