



**Caru Gwenyn
Bee Friendly**



Llywodraeth Cymru
Welsh Government

PLANTING FOR POLLINATORS

A guide to help you select plants and give you ideas on how to make your space, organisation or community Pollinator-Friendly.

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PLANTING FOR POLLINATORS

You can have an important role to play in pollinator conservation¹. All pollinators need nectar or pollen to feed on. Every garden or growing space, no matter its size, can be a haven for pollinators as long as you choose flowers that are good sources of nectar or pollen. Wild pollinators are in decline but the good news is you can help!

Wild flowers are good for pollinators but so are many garden flowers. What matters is that insects can easily collect pollen and nectar. Some brightly coloured garden flowers have been bred for their appearance and are not good food sources. They often have a complex flower structure, which stops insects getting to the food.

Bedding plants such as pelargoniums, begonias, busy lizzy and petunias fall into this category. They usually have very little pollen or nectar that is accessible to the insects that live in Wales.

Fortunately, there are many plants for you to choose from that are appropriate for our pollinators. To get you started the National Botanic Garden of Wales has picked their top 30.

You can find a fuller list of suggested plants for pollinators on the **Bee Friendly webpage**². If you are buying plants, watch out for pollinator-friendly logos on plant labels. This can also help you choose the right plants.

DID YOU KNOW?

Pollinators include bumblebees, solitary bees, honey bees, butterflies, moths, hoverflies and some wasps, beetles and flies. In Wales, honey bees are largely managed by beekeepers and are not in decline.

¹ Turnover in floral composition explains species diversity and temporal stability in the nectar supply of urban residential gardens - www.besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2664.14094

² www.biodiversitywales.org.uk/About-the-scheme

PLANTS PREFERRED BY POLLINATORS

Based on their cutting-edge research, scientists at the **National Botanic Garden of Wales**³ have selected 30 plants that will help you get your space buzzing. To provide food for pollinators it is important to have plenty of plants in flower throughout the year.

EARLY-SEASON

Cherries (*Prunus*)



photo credit: Dr Natasha de Vere

Prunus includes cherries, plums, damsons, gages and sloes (blackthorn). They are loved by insects and people. By flowering early in the season, they provide an important source of nectar and pollen for honeybees, bumblebees, solitary bees and hoverflies.

Varieties of *Prunus* come in different sizes and shapes. *Prunus* can be trained to grow in a fan-like shape against a wall or a fence, which can be a real space saver.

Avoid planting double-flowered forms of cherry as these are generally of little value to pollinators.

Apples (*Malus*)



photo credit: J Brentnall

Malus includes eating, cooking and crab apples. They blossom between late April and May, providing a much-needed early foraging source for honeybees, bumblebees, solitary bees and hoverflies. Later in the year, butterflies including red admirals and painted ladies will feed on the juices of fallen, over-ripe fruit.

Apples are usually grafted onto a rootstock that determines how tall they will grow and how quickly they will come into fruit. Dwarf varieties are suitable for small spaces or large containers. Apple trees can be trained as fans, cordons or espaliers.

³ botanicgarden.wales/science/saving-pollinators/

Crocus



photo credit: Dr Natasha de Vere

Crocuses, in particular, the purple varieties such as *Crocus tommasinianus* are often sought out by honeybees, bumblebees and hoverflies searching for food after winter.

Plant crocus bulbs/corns in Autumn. For best results, plant in well-draining soil. Avoid heavy ground, which can cause bulbs to rot. Crocuses need sunlight when flowering. They can be planted under trees and shrubs that do not have leaves in early spring.

If conditions are right, over time, crocuses will spread naturally to form a carpet of flowers. *Crocus tommasinianus* is one of the best varieties for naturalising. In a lawn, leave crocus leaves to die back before cutting the grass.

Comfrey (*Symphytum*)



photo credit: J Brentnall

Comfrey is a member of the borage family. Short- and long-tongued bumblebees, as well as honeybees and hoverflies will visit the tubular flowers of this plant. Comfrey is the larval food plant of the scarlet tiger moth.

Comfrey can be propagated from root cuttings taken in winter, when the plant is dormant, or divided in the spring.

It can spread invasively. 'Bocking 14' is a type of Russian comfrey that does not produce seeds and is therefore less likely to spread. Less vigorous types of comfrey, suitable for smaller gardens, are *Symphytum ibericum* and *Symphytum* 'Hidcote Blue'. Both make good ground cover.

Comfrey leaves can be used to make a high potassium liquid feed for plants.

Lungwort (*Pulmonaria*)



photo credit: Dr Natasha de Vere

The colourful, tubular early flowers of lungwort provide a nectar and pollen source for bumblebees and solitary bees, especially the hairy-footed flower bee.

It spreads naturally. In the spring, after flowering, or in the autumn, about every three to five years, large clumps can be lifted and divided.

They are ideal for a flower border or bed and can provide ground cover on a bank. Flowers can change colour from when they first appear, to when they are in full bloom. Some have patterned leaves, which also adds interest.

Heathers (*Erica and Calluna*)



photo credit: Dr Natasha de Vere

Calluna and *Erica* are commonly known as heather. There are many different varieties, which flower at different times, including winter into spring, providing forage for honeybees, bumblebees, solitary bees and hoverflies.

Always choose single-flowered forms with visible stamens (the male parts of the flower holding the pollen) and accessible nectar. Some types of heather (known as bud-bloomers) have flowers that do not open and are not accessible to insects.

Heathers generally like full sun and a moist, free-draining, acid soil. However, some *Erica* can tolerate a heavier or lime soil. They work well in a rockery, in a bed specifically for heathers or as potted plants. Lightly cutting back shoots when they have finished flowering promotes growth for the next year.

Heather can be propagated by layering in spring or taking semi-ripe cuttings in summer.

Anemone



photo credit: Dr Natasha de Vere

The cup-shaped flowers of anemone are enjoyed by honeybees, bumblebees and hoverflies. Choose from the white-flowered native *Anemone nemorosa*, *Anemone blanda* in shades of blue, white or pink and *Anemone* × *lipsiensis* in pale yellow.

Anemone nemorosa, commonly called wood anemone, grows in the wild on the floor of deciduous woodlands. It likes sun or dappled shade and damp soil with organic material such as leaf mould. *Anemone blanda* prefers a well-drained soil.

Plant the bulbs/tubers in late summer or early autumn and water well after planting. If the bulbs/tubers are dry, pre-soak in water before planting.

Snowdrop (*Galanthus*)



photo credit: Dr Natasha de Vere

Snowdrops provide a vital nectar and pollen source for emerging pollinators such as honeybees and queen bumblebees.

Plant snowdrops 'in the green', i.e. they have just finished flowering but their leaves are still green. They like free draining soil with organic material. Add grit if your soil is heavy.

Snowdrops grow well under deciduous trees and shrubs or in lawns where they can spread. They can also be grown in pots. Remember to re-pot them annually and not let them dry out in the summer.

Hellebores (*Helleborus*)



photo credit: Dr Natasha de Vere

Hellebores are also called 'Christmas rose' or 'Lenten rose'. They are particularly loved by honeybees and bumblebees. Choose single flowering varieties which have an abundance of pollen and pools of nectar.

They prefer moist, fertile, free-draining soil with some shade. If you plant hellebores on a sloping bed, this will improve drainage and allow you to look into their nodding flowers.

They can be grown from freshly collected seed at the end of their season (around May). They can also be propagated by dividing in early spring or autumn. Wear gloves when handling hellebores as their sap may cause skin irritation.

Mahonia



photo credit: Dr Natasha de Vere

Mahonia are low maintenance, fast-growing shrubs with scented, bright yellow flowers from November to March. They provide early forage for bees and some can be essential for winter-active bumblebees in times of low floral availability.

Mahonia grow well in free-draining, moist soils. Avoid sites which are exposed to cold winds. Their height and spread depends on the variety. They can grow from 1 to 3m.

Their evergreen, spiky leaves are an advantage if you want to make a good security hedge. To encourage bushy growth, prune every other year.

Mahonia can be propagated by layering or stem cuttings in June and July.

MID-SEASON

Blackberries and raspberries (*Rubus*)



photo credit: Dr Natasha de Vere

Bramble is usually found in woods, banks, heaths, hedgerows, sand dunes and wilder areas of gardens and grounds. Although not an ornamental garden plant, it is included on this list due to its great importance as a food source for pollinators. It provides nectar for bumblebees, honeybees, solitary bees, hoverflies and butterflies, including brown hairstreak, comma, gatekeeper, grayling, orange-tip, ringlet and many more. Its leaves provide food for caterpillars such as that of the fox moth. If you have room, please leave bramble to grow in your garden or community space.

Thornless cultivated blackberry varieties are available. They can be grown along a fence, trellis or wire support.

Raspberries are also types of *Rubus*.

Phacelia



photo credit: Dr Natasha de Vere

Phacelia tanacetifolia is a good source of pollen and nectar for a wide range of pollinating insects. It is particularly enjoyed by bumblebees. It would suit an informal border or a wildlife garden and can grow with other annuals (such as cornflower (*Centaurea cyanus*)).

Phacelia tanacetifolia establishes quickly and can be used to suppress weeds or as a green manure as it holds nitrogen. If using as a green manure, in the spring, don't dig it all in but leave an area to flower.

Other *Phacelia* are available. These include *Phacelia viscida* and *Phacelia campanularia*. *Phacelia campanularia* is more compact and would suit being grown as a bedding plant or in a pot.

Knapweed (*Centaurea*)



In Wales, common knapweed (*Centaurea nigra*) is found in grasslands, from meadows to roadside verges and lawns. Its nectar is loved by butterflies, including common blues, marbled whites, meadow browns, large and small skippers. It also attracts bumblebees, honeybees and hoverflies. It would suit a wildflower meadow.

It grows easily from seed. In the wild, knapweed is genetically varied and ideally you should use seeds of local provenance.

Other knapweed species include greater knapweed, cornflower, mountain cornflower, knapweed 'John Coutts' and the yellow giant knapweed (*Centaurea macrocephala*).

All the knapweeds would look good in a bed, border or a container.

Knapweed flowers look like thistles. Thistles are also good for pollinators. A sunny area where you allow thistles to grow will attract butterflies and bees.

Yarrow (*Achillea*)



photo credit: Dr Natasha de Vere

Our native yarrow, *Achillea millefolium*, is found in grassland from lawns to roadside verges and meadows. It is attractive to pollinators, especially hoverflies.

It can be grown from seed and self-seeds readily. It also spreads by underground runners and does not mind being mown in a lawn. Avoid planting *Achillea millefolium* in a flowerbed as it can spread quickly.

However, yarrow has many beautiful cultivated varieties that don't spread, which come in a range of colours and heights. These are ideal for a mixed or herbaceous border.

Allium



photo credit: Dr Natasha de Vere

Alliums are attractive to a range of pollinating insects, particularly bumblebees and honeybees. Edible forms: onions, shallots, leeks, garlic and chives are familiar to vegetable growers. Leaving some of these to flower will provide food for pollinators.

There are many non-edible ornamental flowering varieties of Allium. Plant the bulbs in autumn to have pompom-like flowers the following summer and for years to come. Alliums add height and structure to beds and borders, even through the winter months if you do not remove their seed heads. They also grow well in containers or pots.

Allium paradoxum (Few-flowered leek) and *Allium triquetrum* (Three-cornered garlic) are very invasive and can out-compete our native plants. They are listed on Schedule 9 of the Wildlife and Countryside Act and it is an offence to plant or otherwise cause to grow these species in the wild.

Sea holly or Mountain holly (*Eryngium*)



photo credit: Dr Natasha de Vere

Eryngium has a number of varieties which attract a range of insects including hoverflies. Old flower heads left on the plant provide winter interest.

Grow in full sun in very free-draining poor soil. To help with drainage, grit can be added to the bottom of the planting hole. They do not need a lot of water and grow well at the base of a sunny wall, in a border or a gravel garden.

Root cuttings taken in early spring can be used to make new plants or you can grow them from seed.

Fennel (*Foeniculum vulgare*)



photo credit: Dr Natasha de Vere

Fennel is attractive to a wide range of insects, especially hoverflies, beetles and solitary bees.

Fennel is a tall herb with aniseed-flavoured leaves and seeds. It would suit the centre of a herb bed or look good in the middle or near the back of a large flower border. The bronze-leaved form 'Purpureum' is particularly ornamental.

Seeds can be collected from the parent plant in autumn and grown under cover in a pot in spring. Plant out in May. Allow sufficient space (45cm) as they can grow up to 1.8m tall. Fennel has a tendency to self-seed. Hand-weed unwanted seedlings or lift and grow them on as new plants.

Viper's bugloss (*Echium vulgare*)



photo credit: Matthew Pollard

Viper's bugloss is loved by bumblebees (buff-tailed and red-tailed bumblebees), butterflies (large skipper and painted lady), honeybees and red mason bees. It is native to the UK and likes disturbed ground. It would suit a well-drained mini-meadow, wildlife garden, the front or middle of a sunny flower border or a container.

It takes two years to reach maturity and will flower and die in its second year. After flowering, if you allow seeds to develop, and do not cut the stems back, they will self-sow freely onto bare ground. Alternatively, in the autumn, cut a plant and store it in a paper bag. Then, in late winter, remove the dried plant and place it flat on a seed tray and lightly cover with compost. Small seedlings that appear can be grown on.

Catmint (*Nepeta*)



photo credit: Dr Natasha de Vere

Catmint is not just attractive to cats but also to pollinators. It is a low maintenance plant that grows in well-draining soil.

There are many different types of catmint, which grow to different heights, and would suit a border, bed or container. Low growing varieties can provide ground cover or be grown in a rock garden. Trailing varieties look good in hanging baskets, window boxes and spilling over container edges.

Lightly cutting back after they first flower (June-July) encourages flowering again in late summer. Leaving leaves on over winter will protect the crowns.

Propagate by dividing large plants in spring or autumn. You can also take softwood cuttings in early summer or semi-ripe cuttings in early autumn.

Marjoram and Oregano (*Origanum*)



photo credit: J Brentnall

Origanum vulgare is our native wild *marjoram*. Other commonly grown marjorams are sweet marjoram (*Origanum majorana*) and pot marjoram (*Origanum onites*). They provide food for pollinators including bees and butterflies. Use leaves to flavour pizza and pasta sauces.

Once established, they are relatively drought-hardy and roots can rot if over-watered. To encourage new growth, cut back old vegetation before it starts to grow again in early spring. Sweet marjoram is less cold-hardy than other varieties.

Other herbs loved by pollinators include sage (*Salvia*), thyme (*Thymus*), mint (*Mentha*) and rosemary (*Rosmarinus*).

Grow herbs in a hanging basket, pot, window box, bed or an entire garden. Herbs look attractive with other flowers in beds or planters. Mint can be invasive. To help stop it spreading, plant it in an old bottomless bucket.

LATE-SEASON

Masterwort (*Astrantia*)



photo credit: Dr Natasha de Vere

Masterwort attracts butterflies, solitary bees and hoverflies. It would suit a bed, border, pot or container.

To prolong flowering, remove dead flowers regularly. Alternatively, in July after their first flowering, cut the entire plant back close to the ground to get a late crop. Towards the end of the season, leaving flower heads on will give architectural interest over winter.

Masterwort can self-seed. Collect seeds in autumn when the flower heads are dry. Sow onto compost and lightly cover with horticultural grit. These can be left outside over winter to encourage germination. Alternatively, store seeds to sow in the spring. Once established, large clumps of plants can be lifted, divided and planted in spring.

Rudbeckia



photo credit: Dr Natasha de Vere

Rudbeckia is a great source of nectar for insects, including bees, hoverflies and butterflies. It would suit a border, bed or container but choose single-flowered varieties as the double-flowered types are not suitable for pollinators. Removing flowers when they fade will prolong flowering.

Rudbeckia varieties are available as perennials (flowering year after year). *Rudbeckia* is also available as a half-hardy annual. In spring, it can be grown from seed indoors under cover, in a warm room. Plant out when the frosts have passed. Alternatively, sow directly into a prepared bed in May.

After a number of years, they can be lifted and divided in the spring or autumn.

Helenium



photo credit: Dr Natasha de Vere

Helenium, also known as sneezeweed, provides late season food for pollinators, in particular bees and hoverflies. Regular removal of dead flowers will encourage repeat flowering. For taller varieties, staking around plants in the spring is recommended. Cutting back by about half in late May to early June in south Wales and later on in June in north Wales will control height. This is known as the 'Chelsea Chop'. Feed and water after cutting. This delays flowering. If you have a lot of *Helenium*, cut back a proportion so some will flower earlier and others flower later. A 'Chelsea Chop' can also be done on *Rudbeckia*.

When plants become overcrowded, they cope well with being divided and grown on in the autumn and spring. Take basal cuttings in early spring from new growth that shoots up at the edge of the bottom of the plant.

Michaelmas daisies



photo credit: Abigail Lowe

Michaelmas daisies flower very late into the autumn and provide food for butterflies, bumblebees and hoverflies. Botanically, European species are known as *Aster* and North American species as *Symphotrichum*.

Some Michaelmas daisies can spread quickly and become a problem. The following are some non-invasive varieties: starwort (*Aster amellus cultivars*), New England Michaelmas daisy (*Symphotrichum novae-angliae cultivars*), Michaelmas daisy hybrid 'Mönch' (*Aster x Frikartii 'Mönch'*).

They look good in a border and removing faded flowers will encourage continued flowering. Taller varieties may require support by staking.

Create new plants by taking basal or softwood cuttings in the spring. Established plants can be divided (about every three years) in the spring after new growth starts.

Scabious (*Knautia arvensis*/*Succisa pratensis*)



photo credit: Lucy Arnold-Matthews

Two of our native scabious, *Knautia arvensis* (field scabious) and *Succisa pratensis* (devil's-bit scabious) provide late nectar and pollen-rich flowers for a range of insects, especially butterflies and bees. Their leaves provide food for caterpillars of the narrow-bordered bee hawk-moth. Devil's-bit scabious is the food plant for the caterpillars of the marsh fritillary butterfly.

Field scabious favours alkaline conditions. In the wild, it is mainly found in chalky and neutral grassland. It would suit being grown in a border, bed, wildflower meadow or garden.

Devil's-bit scabious can be found on damp, marshy grassland and river banks. It is excellent for wetter areas of the garden including bog gardens.

Small scabious (*Scabiosa columbaria*) is another native wild flower which is beneficial

to pollinators. It flowers earlier than field scabious and devil's-bit scabious. If you have some space in a well-draining area like a rock-garden, wall or border, insects will come to enjoy their delicate flowers.

Scabious can be grown from seed or bought as plug plants.

Mallows (*Malva*)



photo credit: Dr Natasha de Vere

Musk mallow (*Malva moschata*) and common mallow (*Malva sylvestris*) are native garden plants. Their flowers are used by bumblebees as a source of pollen. They are also favoured by honeybees.

Mallows would suit a mixed border, cottage or wildflower garden. They have spikes of purple flowers that are 1.5m tall and look good at the back of a border.

They are easily grown from seed and self-seed readily. Varieties of common mallow are available in seed catalogues. Either sow and lightly cover with soil in a prepared seedbed in the autumn before frost, or sow indoors in a

warm place around eight weeks before you would normally get a last frost. Plant out when danger from frost is over.

Like mallows, single-flowering varieties of hollyhocks (*Alcea*) have the central part of their flowers open, allowing pollinators access to food. Hollyhocks can grow up to 2m and suit the back of a sunny border. They are easily grown from seed. Plants sown this year will flower in the next, and once established they will self-seed.

Both mallows and hollyhocks are susceptible to rust, in which leaves get orange spots on their underside. Rust can be controlled by removing infected leaves as soon as they appear on the plant. In the autumn, collect dead leaves around the plants and burn.

Ivy (*Hedera helix*)



Native ivy (*Hedera helix*) grows well throughout Wales. It is found in woodlands, hedgerows and on walls. Its leaves stay green all year round, and

mature plants produce flowers from September to November. Ivy is a larval food plant for the holly blue butterfly and several moths. Ivy provides one of the last sources of nectar for butterflies, bees, hoverflies and a wide range of other insects including night-time visitors like moths. This is important, as these insects need to build up fat reserves before going into hibernation. Insects, including the brimstone butterfly, use the dry, shelter of ivy to hibernate.

It suits being grown up an old tree, shed, pagoda or fence. It produces aerial roots along its stem so does not need to be tied in. However, on walls, if mortar and bricks are not sound, ivy can grow into cracks and cause damage. There are a few garden varieties of non-climbing, arborescent ivy (e.g. *Hedera helix* 'Arborescens'). You can also take a cutting from the arborescent stems of native ivy and it will not revert back to the climbing form. Some people are irritated by its sap so best wear gloves if you are sensitive.

Ice Plant (*Hylotelephium spectabile*)



Ice plant, *Hylotelephium spectabile*, formerly known as *Sedum spectabile*, has succulent leaves and flowers loved by bumblebees, honeybees and butterflies.

This perennial plant likes a very free-draining soil and once established is drought-hardy. The flower heads can be left on to provide winter interest. It would suit a bed, border, pot, gravel or rock garden.

In the spring, large plants can be divided about every three to four years. Softwood cuttings of non-flowering shoots can also be taken in early summer.

Single-flowered Dahlia



photo credit: Dr Natasha de Vere

Single-flowered dahlia is a flat flower made up of petals around a central disk, which contains rows of stamens with yellow/orange pollen on its outer edge. The flat open flowers are perfect for pollinators, particularly bumblebees, allowing access to pollen and nectar.

This is not the case in double-flowered forms of dahlia. Their complex layers of petals prevent insects getting to food. In some, the male flowering parts do not contain pollen as they have been modified to give the appearance of more petals.

Single-flowered dahlia look lovely in a mixed border, in a large pot or container. Plant the tubers when the danger of frost has passed. They are half-hardy and need winter protection. In milder areas around the coast, you could leave them in the ground over winter but protect the crowns with a deep layer of dry mulch, such as straw or leaves. Otherwise, after leaves have died back, lift and clean the tubers. These need to be stored in a frost-free place lightly covered with damp compost or sand.

Verbena bonariensis



photo credit: Dr Natasha de Vere

Verbena bonariensis is a great source of nectar for many pollinators. In a bed or border it will give height. Due to its open structure, it will not hide plants behind it. *Verbena bonariensis* can be grown in a large pot or container. A shorter variety, 'Lollipop', is available.

Verbena bonariensis self-seeds. New plants can be grown from seeds collected in the autumn. Around May, sow directly into a prepared bed and cover with a layer of soil. Alternatively, sow seeds under glass in a warm place around eight to twelve weeks before the last frosts. Plant out when danger of frost has passed. In September, cuttings can be taken from a non-flowering side shoot.

Verbena bonariensis is not completely hardy. A layer of dry mulch can offer some protection from frost. Over winter, leave stems on the plant and cut back when shoots appear in spring.

SUMMARY TABLE

Early season

<i>Prunus</i>	Apples
Crocus	Comfrey
Lungwort	Heathers
Anemone	Snowdrop
Hellebores	Mahonia

Mid-season

Blackberries & raspberries	Knapweed & thistles
<i>Phacelia</i>	Yarrow
Allium	<i>Eryngium</i>
Fennel	Viper's bugloss
Herbs	Catmint

Late season

Masterwort	<i>Rudbeckia</i>
<i>Helenium</i>	Aster
Scabious	Mallows & hollyhocks
Ivy	Ice Plant
Single-flowered Dahlia	<i>Verbena bonariensis</i>

TOP TIPS TO MAKE YOUR SPACE POLLINATOR-FRIENDLY

- Be more wild and less neat! You may already have good sources of food or shelter for pollinators, for example, patches of weeds/wildflowers, bramble, ivy, dandelions, clover, nettles and thistles. During winter, dead seed heads and stems can provide shelter for insects.
- Cut your grass less often (pages 21-23).
- The best place to grow your plants for pollinators is in a sheltered sunny spot.
- Planting blocks of the same type of flower saves energy and foraging time for pollinators as they can move from flower to flower more quickly.
- Choose flowers that insects can easily collect pollen and nectar from e.g. simple open or bell-shaped flowers. Avoid double-flowered varieties.
- Old-fashioned plant varieties tend to have more nectar than modern forms and hybrids.
- Caterpillars become butterflies and moths. Grow plants to feed caterpillars. Find suggestions on the Bee Friendly plant list.⁴ Remember you are growing them to be eaten, so do not to squish or remove the caterpillars.
- Night-scented plants are good for moths e.g. honeysuckle, common jasmine, evening primrose, sweet rocket, Nicotiana and night scented stocks.
- Avoid chemicals that may harm pollinators. Many pests, weeds and diseases can be controlled without using pesticides, such as weeding by hand instead of spraying.
- Maximise small spaces by growing plants on a trellis or climbing frame, in a hanging basket or window box.
- In vegetable gardens and allotments, allow some of your brassica crops, onions and root crops such as parsnips and carrots to flower.
- Allow some of your green manures or 'cover crops', such as *Phacelia*, buckwheat and clover, to flower for their beneficial nectar.
- If you have any hedgerows, avoid cutting them all in the same year so there will always be some uncut hedges left to provide food, egg laying, hibernation and nesting sites.
- Non-native horticultural or ornamental plants should not be planted in natural or semi-natural areas.
- In the autumn, plant pollinator-friendly bulbs/tubers to flower the following spring, for example snowdrop, crocus, allium and grape hyacinth (*Muscari armeniacum*). Daffodils and tulips are not the best for pollinators.
- If you are going to sow wildflower seeds, do this on prepared soil.

CUT YOUR GRASS LESS OFTEN – 'IT'S FOR THEM'

One of the simplest ways to provide food for pollinators is to allow flowers in grassy areas to grow.⁵ Cutting less often and collecting the cut grass creates a better habitat for 'Them': invertebrates, birds, small mammals, amphibians and reptiles. **'It's for Them'**⁶ has resources to explain why this is important.

This does not mean that you have to let your space go completely wild. Here are some ways to change how you cut your grass that will really help pollinators.

- **Let your grassy areas have a spring flower bloom** – Delaying cutting your grass until late spring will allow common lawn plants such as daisies and dandelions to flower.

DID YOU KNOW?

In early spring, one bumblebee queen needs to feed on 6000 flowers a day to have enough energy to raise her young! Having early spring flowers, which includes dandelions, will provide a vital food source.

- **Create nectar-rich areas by mowing your grass less often** – From April to November, cut and collect some areas on a 4-8 week rotation with your mower set at 2.5-5cm (1-2 inches). You will cut off some flowers but more will quickly grow back. If you can cut different patches of lawn in rotation, you will always have some areas in flower. Plantlife's⁷ Every Flower Counts research found this gives 'short-grass' plants like daisies and white clover a chance to flower in profusion, boosting nectar production tenfold.

DID YOU KNOW?

Bird's foot trefoil is a larval foodplant for several scarce and beautiful butterflies and moths. Along with red clover, it has high protein content in its pollen. Both are very important for bumblebees and solitary bees in our wet summers.

- **Create a meadow, wildflower strip or patch** – To have flower-rich, meadow-like grassland, plants need to complete their full life cycle. They need to be allowed to grow, flower and set seed. If you have enough

⁵ pollinators.ie/resources/

⁶ www.gov.wales/its-them-campaign-stakeholder-toolkit

⁷ www.plantlife.org.uk/uk

space, allow some areas to grow long. Follow the steps below and, over a number of years, you can transform patches, strips, your whole lawn or field into a wildflower meadow. If your area is large enough, cut some footpaths through the meadow so you can walk amongst the flowers.

More detailed information on creating wildflower meadows can be found on **Plantlife's Meadows Hub**.⁸ **Nature Isn't Neat's Code of Practice**⁹ explains how to make any green space more biodiverse.

1. Wait until late spring to do the first grass cut to allow some dandelions to flower.
2. During the summer, allow vegetation to grow long.
3. Cut and collect grass in autumn. Delaying cutting and removing vegetation until after the majority of plants have flowered helps extend the time food is available for pollinators. Alternatively, you could cut different areas from mid-July onwards changing which area is cut first each year. This way you maintain some flowers through to the autumn. If grass growth is very strong and the vegetation is falling over under its own weight, cut and collect sooner e.g. around July and again in the autumn. After a few years, as soil fertility is lowered, this mid-summer cut will no longer be necessary and one cut in autumn will be enough.
4. It is important to collect and remove grass clippings after each cut. This prevents the build-up of organic material (a thatch of dead vegetation) which, if left, will smother delicate plants. It ensures there is plenty of exposed ground for plants to regenerate from seed. It reduces soil fertility, which curbs the growth of fast-growing nutrient-loving grasses that can choke wildflowers.
5. **Optional extra:** Legally collect local wildflower seeds¹⁰, sow them in trays and grow-on as small plants (plugs) which can be added to the meadow in spring and autumn. For a large area, use local green hay as a seed source.

⁸ meadows.plantlife.org.uk/3-maintaining-meadows/managing-meadows-of-all-sizes-with-mowing/

⁹ www.monlife.co.uk/outdoor/nature-isnt-neat/training-and-resources/

¹⁰ www.plantlife.org.uk/uk/discover-wild-plants-nature/picking-wildflowers-and-the-law

DID YOU KNOW?

Herbicides, including moss killer, can impact wildflower establishment and growth. Fertilisers increase grass

growth, which can smother wildflowers. Avoid using these in your lawn if you want wildflowers.

'IT'S FOR THEM' POLLINATOR-FRIENDLY GRASS CUTTING

Cutting your grass less often is one of the simplest ways to allow flowers to grow and provide food for pollinators and other wildlife.

MEADOW-LIKE AREA: Allowing vegetation to grow long provides food and shelter. After flowers have set seed, cut and collect cuttings in the autumn.

NECTAR-RICH AREA: From about April, the wildflowers below grow in slightly longer grass. Cutting and collecting some areas on a 4-8 week rotation with your mower set at 2.5-5cm (1-2 inches) will give them a chance to bloom.



Mowing some footpaths lets you walk amongst the flowers.

© Cath Shellswell

CONTAINERS

Containers and planters can offer valuable growing spaces. They can bring to life a window ledge, a small yard, patio or a hard standing. In a town centre or on the high street, they provide a wonderful display to showcase which plants are good for pollinators. Plants in containers or pots will be completely dependent on you. Throughout the spring and summer, check daily to see if they need watering. When plants are in flower, also use a high potassium liquid feed fortnightly. Comfrey leaves make a suitable liquid feed. Make sure the containers or pots have good drainage. Do not forget they will need to be placed in a sunny spot.

To stop the plants getting too wet and cold over winter, if possible, bring small and medium containers into an unheated glasshouse or porch. Alternatively, raise them slightly off the ground and place them in the shelter of a wall. In the spring, top up your pots with soil-based, peat-free compost. Don't fill your containers to the brim. Leave about 2.5 cm below the rim, which will allow water to collect and soak in.

The following table, adapted from Jan Miller-Klein's book¹¹, with a few plants suggested by the National Botanic Garden of Wales, lists some pollinator-friendly flowers suitable for containers. To help you choose which plants to grow and where to position them in a container, they have been arranged according to their size. Place your largest plants in the centre. As you move towards the outside of the container decrease the plant size, with trailing plants at the edge.

If your container is against a wall, place the largest plants at the back. Many of these plants are perennial and will flower year after year.



¹¹ Adapted from Gardening for Butterflies, Bees and other beneficial insects: A how to guide. Jan Miller-Klein ISBN 978-0-9555288-0-4

Positioning Pollinator Plants in a Container

LARGE	MEDIUM	SMALL	TRAILING
<i>Agastache</i>	Campion	Clovers	<i>Aubrieta</i>
<i>Ageratina ligustrina</i>	Catmint	Colt's foot	Bird's foot Trefoil
Allium	Feverfew	Crocus	Bugle
Dahlia (single flowering)	Honesty	Dead Nettle	Catmint (trailing)
Echinacea	Ice Plant (<i>Hylotelephium spectabile</i>)	Forget-me-not	Ivy (trailing)
Evening Primrose	Knapweed	Heather	Sedums (small)
Lavender	Marjoram	Hellebores	Thyme (creeping)
Non Climbing Ivy (<i>Hedera helix</i> 'Arborescens')	Masterwort	Kidney vetch	Viper's Bugloss 'Blue Bedder'
Rosebay Willowherb	Mint (plant in its own container)	Marigold	
Rosemary	<i>Nicotiana</i>	<i>Primula</i>	
<i>Verbena bonariensis</i>	Oregano	Snowdrops	
Wallflowers (Perennial) e.g. Bowles Mauve	<i>Rudbeckia</i>	Sorrel	
	<i>Salvia</i>	Thyme	
	<i>Scabious</i>	Tufted Vetch	
	Viper's bugloss	Violets	

WHAT DOES A POLLINATOR-FRIENDLY SPACE LOOK LIKE?

Here are some ideas to make your space pollinator-friendly, no matter what the size. Illustrations are on pages 28-33.

Balconies and yard spaces

Welcome pollinators to your balcony or courtyard by planting pollinator-friendly plants that will also give you colour, fragrance and food. It is very important to know how much weight your balcony can take. To reduce weight, use pots and containers made from light materials but make sure they are secure. Lightweight peat-free compost formulations are also available. Take into account that containers will be heavier after they are watered. You may need a windbreak to make your balcony more sheltered.

In a yard, you will not be limited by weight so you can use larger containers. To give you additional growing space you can tier planters on top of each other like stairs or a pyramid. In a large container, you could plant a fruit tree from a dwarf rootstock and, if space is limited, you could train it against a wall.

Community spaces

Shared community spaces such as allotments, school grounds or community gardens can become havens for pollinators.

First of all, have a good look at your space and identify areas that already provide food and shelter for pollinators, for example: flowering hedgerows, patches of wildflowers on waste ground, areas of bramble or ivy. Native hedges with willow, blackthorn, hawthorn, crab apple, wild cherry, wild plum, bramble and ivy can provide food from early spring to late autumn. They provide shelter and are used by insects through different life stages i.e. egg, larva, pupa and adult.



If you have a native hedgerow or plan to grow one, remember to leave some of your hedge uncut. Trim hedgerows once every 3-5 years, and cut no more than a third in any one year. This is particularly important if you are looking after hedges and woodland edges where the **brown hairstreak**¹² butterfly may be present.

You may have a grassy area that you keep cut short. If you let it grow, it could contain a variety of common wildflowers like daisies, buttercups, bird's foot trefoil, clover and dandelions.

It is important to grow plants that will provide food for pollinators throughout the year. If your school or community space has a hard standing, you could use planters and pots to grow plants in. The larger the container the easier it will be to maintain.

If you have a building or a fence on your property, you could use it to maximise your growing area. For example, thornless blackberry, honeysuckle, or a single-flowering rose can be grown on a trellis. A cherry or apple tree can be trained against a wall. A shed or building could incorporate a green roof¹³.

Pollinators need water. They get hydration from nectar and, to maintain nectar flow, it is important to keep plants watered in dry weather.

A shallow dish with some stones topped up with clean rainwater can give them an extra drink.

If you want to make places for pollinators to shelter and nest, the All Ireland Pollinator Plan has developed a very useful **How-to-guide on Creating Wild Pollinator Nesting Habitats**¹⁴. **The Pollinator Garden**¹⁵ has information on building and maintaining bug hotels.

Gardens

Gardens vary considerably in size. If you have a small garden, some of the ideas in the balcony/yard may be helpful to you. If you have a larger garden, you may be able to incorporate more of the ideas that are shown in the community space.

To help you visualise what your pollinator garden could look like, a medium-sized urban garden has been illustrated.

¹² butterfly-conservation.org/sites/default/files/bcw_brown-hairstreak-with-badge.pdf

¹³ Buglife's 'A Best Practice Guide for Creating Green Roofs for Invertebrates' -

www.cdn.buglife.org.uk/2019/07/Creating-Green-Roofs-for-Invertebrates_Best-practice-guidance.pdf

¹⁴ www.pollinators.ie/wordpress/wp-content/uploads/2018/02/Pollinator-How-to-Guide-1-ALT_FINAL.pdf

¹⁵ www.foxleas.com/

WELCOME POLLINATORS TO YOUR BALCONY AND YARD SPACES

Nasturtiums (*Tropaeolum majus*) have big seeds, easy for children to grow. Remember to collect and store seeds for the following year.

Think about how you can increase space. Use a climbing frame, hanging basket, window box, shelving or pots attached to a wall.

Planters, pots, window boxes and hanging baskets can offer valuable growing spaces for pollinator plants.

Pollinators need to drink. To maintain a flow of nectar it is important to keep plants watered in dry weather.

Choose flowers that insects can easily collect pollen and nectar from e.g. simple open or bell-shaped flowers. Avoid double-flowered varieties.



Spring flowering bulbs
e.g. snowdrop, crocus and grape
hyacinth can be grown in pots
or a window box.

Grow a cultivated thornless
blackberry on a trellis or try
a honeysuckle. This night-scented
plant is good for moths.



A herb garden
can be in a
window box
or a pot.

Make savings and grow your
own plants from seeds and
cuttings from friends.

WELCOME POLLINATORS TO YOUR COMMUNITY SPACE

Native hedgerows provide food and shelter.

To prevent high mortality of larvae from fungus moulds, bug houses need protection from wet weather.

A glasshouse or poly-tunnel helps you grow plants from seeds and protects less hardy plants in winter.

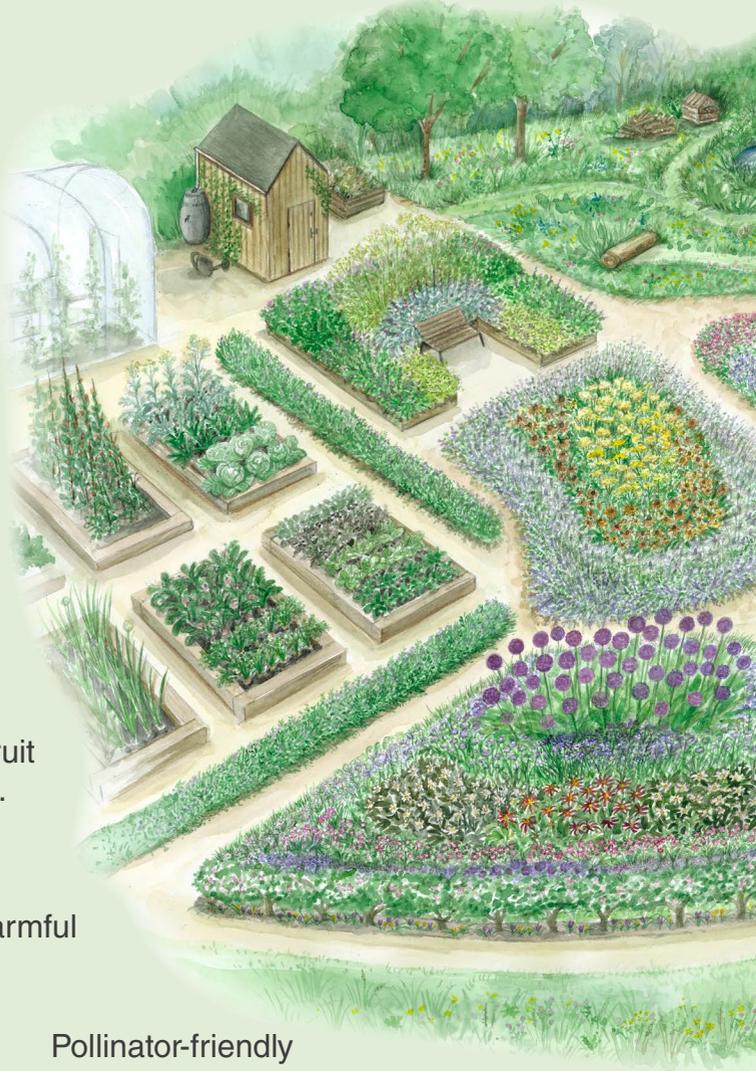
Herbs are a good communal crop for picking throughout the season.

Leave some vegetables and green manures to flower.

Insects will pollinate your fruit and vegetables.

Avoid using harmful chemicals.

Pollinator-friendly flowerbeds and borders in sunny spots provide food throughout the year.



Be wild – allow nature to reclaim some areas. If possible, let plants like thistles, nettles and bramble grow.

Earth banks, bare soil, gaps in walls, piles of stones and logs can provide homes for bees.

Sheds, buildings, walls and fences offer additional growing spaces.

Mature ivy along a fence can provide food and shelter for a variety of pollinators.

Cut your grass less often. Vary how you mow and collect your cuttings – see pages 21-23.

Fruit trees can be a grown as a standard tree, in pots, trained against walls or along wires. Apple trees may be grown in an arch or as a low step-over border to separate areas.

Planting blocks of the same type of flower saves time for pollinators as they can move from flower to flower more quickly.



WELCOME POLLINATORS TO YOUR GARDEN

Pollinator plants can be grown in paving cracks e.g. creeping thyme.

Spring bulbs such as snowdrops and crocus can come back year after year and spread naturally.

Mahonia makes a pollinator-friendly hedge.

Avoid using harmful chemicals.

Plant pollinator-friendly flower beds, borders and pots in sheltered sunny spots to provide food from early spring to winter.

Water in a shallow dish with stones will give pollinators a drink.

Homemade garden compost can be used for your flowers and crops.



Be less neat. To survive, pollinators need shelter. Hedges, gaps in walls, tall grass, stone piles, logs, earth banks and bare soil provide nesting and overwintering sites. During winter, dead seed heads and stems also provide homes for insects.



Tiering planters on top of each other optimises growing space.

Early flowering wood anemone, crocus and snowdrops can be planted under deciduous trees and shrubs.

Be wild – allow nature to reclaim some areas.

Cut your grass less often. Vary how you mow and collect your cuttings – see pages 21-23.

Leave some vegetables to flower.

GROW YOUR PLANTS FOR NEXT TO NOTHING

It is very rewarding to see pollinators feeding from flowers that you have planted. Think how satisfying it would be to raise your own new plants too. There are several ways you can do this.

From seeds

Many wildflowers and garden plants can be grown from seed. From a single packet of seeds you can grow many more plants for less money than the cost of a bought plant. It is even more cost effective if you can collect seed from your garden.

The National Botanic Garden of Wales has set up a seed bank to conserve seeds of wild Welsh plants. They share their secrets for drying, cleaning and storing seeds in **Successful seed saving at home**¹⁶ and **Successful seed storage at home**¹⁷.

The All Ireland Pollinator Plan has produced a **How-to-guide, Collecting and using pollinator friendly wildflower seed**¹⁸.

The Royal Horticultural Society also provides advice on **seed collecting and storing**¹⁹.

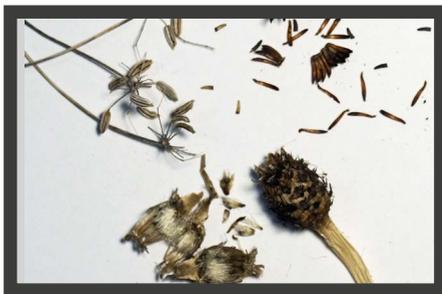


photo credit: J Brentnall

From cuttings

With a little practice and know-how, you can take cuttings from certain plants. The National Botanic Garden of Wales has a helpful guide **on taking cuttings in the garden**.²⁰

The Royal Horticultural Society has step-by-step guidance. **Softwood cuttings**²¹ are the easiest method. This is carried out in the spring or early summer. Once you have learnt how to do this, you can move on to **semi-ripe cuttings**²² and **hardwood cuttings**²³ which are taken later on in the year.

¹⁶ botanicgarden.wales/successful-seed-saving-at-home/

¹⁷ botanicgarden.wales/successful-seed-storage-at-home/

¹⁸ www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-How-to-Guide-2_ALT_FINAL.pdf

¹⁹ www.rhs.org.uk/advice/profile?pid=675

²⁰ botanicgarden.wales/2020/12/taking-cuttings/

²¹ www.rhs.org.uk/advice/profile?pid=307

²² www.rhs.org.uk/advice/profile?pid=404

²³ www.rhs.org.uk/advice/profile?pid=387



photo credit: Jan Miller

Layering

Layering can also be used to make new plants. This technique can be used on blackberries, heather, mahonia and honeysuckle. Layering can be done by pegging an outer flexible young stem down to the ground or into a pot containing soil, which encourages new roots to grow at the point of contact with the soil. The developing new plant remains attached to its parent and is only cut away when it becomes a strong plant with established roots. The Royal Horticultural Society has detailed advice on the different methods of **layering**²⁵.

Division

Splitting your perennial plants when they become crowded will increase their vigour and provide you with new plants. Plants that are divided need to be planted on as soon as possible. The Royal Horticultural Society also provides advice **on division**²⁴.

²⁴ www.rhs.org.uk/plants/types/perennials/dividing

²⁵ www.rhs.org.uk/advice/profile?PID=358

RESOURCES AND SUPPORT

This publication has been produced as part of the Bee Friendly scheme.



For general enquiries about Bee Friendly, applications and renewals please contact:

natureconservation@gov.wales

Bee Friendly
Biodiversity and Nature
Conservation Branch
Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
SY23 3UR

Resources for Bee Friendly, and the latest Bee Friendly news and information:
www.biodiversitywales.org.uk/Bee-Friendly

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Illustrations by
Aga Grandowicz.³⁰

²⁶ www.wlwf.org

²⁷ www.7wells.co.uk

²⁸ botanicgarden.wales/

²⁹ meadows.plantlife.org.uk/3-maintaining-meadows/managing-meadows-of-all-sizes-with-mowing/

³⁰ aga-grandowicz.com