> There are around **275** species of bees and roughly **250** species of hoverflies in the UK.

Creating Pollinator Friendly Gardens and Green Spaces on B-Lines

buglife

© Kevin Thomas

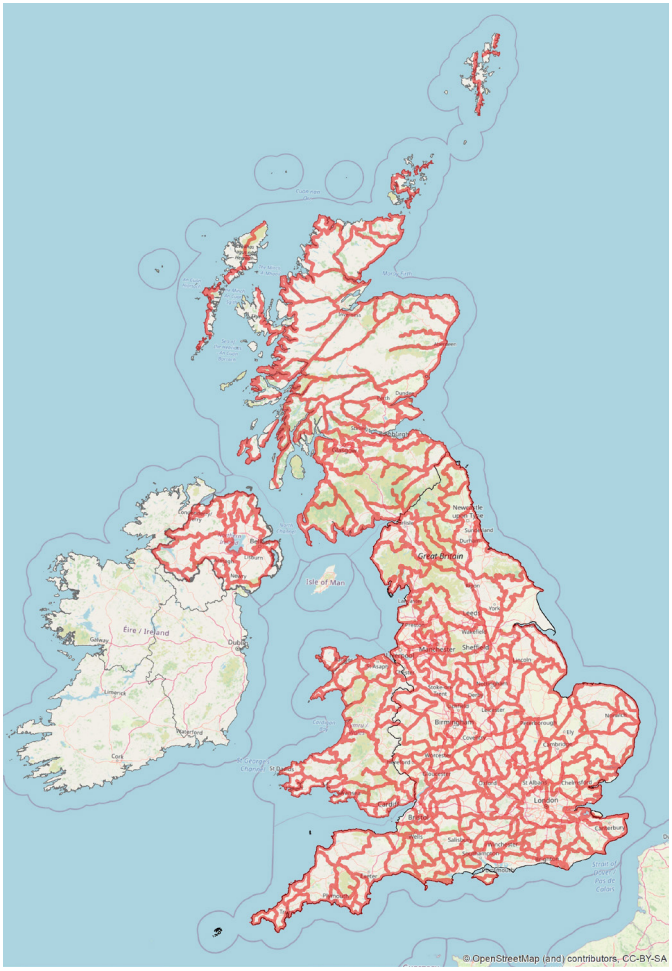
What are B-Lines?

B-Lines are a pollinator superhighway which Buglife is delivering together with many organisations and individuals. It runs across the British countryside, towns and cities, running north to south and east to west joining up the best remaining wildflower-rich habitats. Within B-Lines we are creating additional flower-rich stepping stones, big and small, to help pollinators and other insects travel safely through our landscape.

Built-up and intensively farmed or managed environments can be very difficult for insects to move through as there is no food or suitable resting places. Many insects are unable to travel very far and can therefore become isolated within small ‘islands’ of good habitat, unable to colonise new areas or recolonise old sites. This means both habitats and species can become increasingly fragmented and vulnerable. B-Lines is the beautiful solution to joining up the wildflower-rich places in our towns and countryside to help halt the decline in insect populations, and we need your help!

With around three quarters of British adults having access to a garden, and even more to public green spaces, together, with the right approach there is a huge amount we can do to help pollinators and other wildlife in our gardens and green spaces.

And don’t forget to visit our B-Lines map to see if your garden or community space falls within a B-Line and add your project to the map!



UK B-Lines network. Interactive map accessible at buglife.org.uk

Common Blue Butterfly (*Polyommatus icarus*) © Liam Olds

Six-belted Clearwing (*Bembecia ichneumoniformis*) © Liam Olds

Food for all

Different pollinators need different plants. We have a large diversity of pollinating insect species in the UK, including around 275 species of bees and roughly 250 species of hoverflies. Different species vary a lot in their size (UK bees range from wing lengths of 4 mm in the smallest solitary bees to 18 mm in the Large Garden Bumblebee (*Bombus ruderatus*)) and feeding preferences; in fact, one of the main factors affecting flower choice in pollinators is tongue length.

Even within our bumblebees there is a range of tongue lengths, White-tailed (*Bombus leucorum agg.*), Buff-tailed (*Bombus terrestris*) and Early Bumblebee (*Bombus pratorum*) have quite short tongues so use shallow flowers, or sometimes cleverly cut holes at the base of deeper flowers to "nectar rob". Other insects, like Honeybees (*Apis mellifera*), may also feed from these holes. Longer tongued species like Garden Bumblebee (*Bombus hortorum*) can access deep flowers like Foxglove and aquilegia. Open flowers like daisies and the parsley family are enjoyed by short-tongued pollinators such as hoverflies and some of the smaller bees. Some tiny bees, like Yellow-faced bees (*Hylaeus sp.*) can even get right inside small flowers like Chives.

As well as providing a diversity of different plants of varying flower structure to suite different pollinators, try to clump plants in patches to improve foraging efficiency for pollinators. If you only have two examples of a particular plant at opposite sides of a garden, foraging from this plant requires more energy than foraging from a patch or a line of the same species. Spending time watching how insects use plants in your green spaces and local area can help you adjust your management to optimise what you provide.

Garden Bumblebee (*Bombus hortorum)* © Suzanne Burgess

Flowers, flowers, flowers, spring to autumn

Bees, hoverflies and other insects are on the wing from around March to September and need a constant source of food (pollen, nectar and even aphid honeydew).

Spring is particularly important for bumblebees, as hungry queens are emerging from hibernation, and need to feed up before they begin to start a nest. When we talk about flowers for insects we don't just mean plants in our borders or pots. Wildflowers in lawns, flower-rich grasslands, flower-rich ponds and other wet habitats, and flowering trees and shrubs are all very important sources of pollen and nectar and can be a beautiful addition to gardens and community green spaces where space permits.

When growing plants for pollinators on B-Lines we prioritise native wildflowers of local provenance, found growing in your area, as these are the plants which are preferred by a wide diversity of local insects. For planting in gardens, you may also choose pollinator friendly garden plants, but remember, unless these are sourced from an organic garden centre, they are likely to come treated with herbicides and insecticides. Avoid using any chemicals in your garden to create a safe space for insects and other wildlife.

Tiger Hoverfly (*Helophilus pendulus*) © Liam Olds

Try some of these suggestions for plants popular with a range of pollinators:

SPRING

Early flowering trees and shrubs are very important for pollinators, try willows, Blackthorn, Cherry Plum, Hawthorn, Flowering Currant, fruit trees like apples and plums. In flower beds - hellebores, aubretia, Grape Hyacinth and Lungwort. In lawns, verges and along village greens dandelions are loved by a vast array of insects, including spring solitary bees. Other popular wild, spring flowers include violets, Coltsfoot and Winter Heliotrope.

SUMMER

Herbs like Sage, Thyme, Rosemary, Marjoram and Lavender are all very popular, and also grow well in pots. Plants in the vetch family, clovers and trefoils, etc. and the daisy family, which includes thistles and knapweeds, are also very popular with bees and hoverflies and for the longer tongued bee species, try plants like foxglove, monkshood, aquilegia and Fuchsia. Hoverflies like more open flowers like umbellifers (hogweed and angelica are popular) and for butterflies Red valerian and Buddleia are favourites.

LATE SUMMER/ EARLY AUTUMN

An important time for our pollinators as new bumblebee queens need to be well fed to last through hibernation and late solitary bees are still finishing off their nests. In fact, the Ivy Bee is a solitary bee which relies on Ivy, a very late flowering and important food plant for many pollinators including wasps and hoverfly species. Other, late flowering, pollinator friendly plants include Globe Thistle, heathers, Devil's Bit Scabious and Sunflower.

© Lucia Chmurova

Let it grow, let it grow

The good news is that you can help insects with minimal effort, simply put the mower away, grab a cuppa, pull up a chair and watch the butterflies, bees, hoverflies and beetles visiting the flowers you have allowed to bloom.

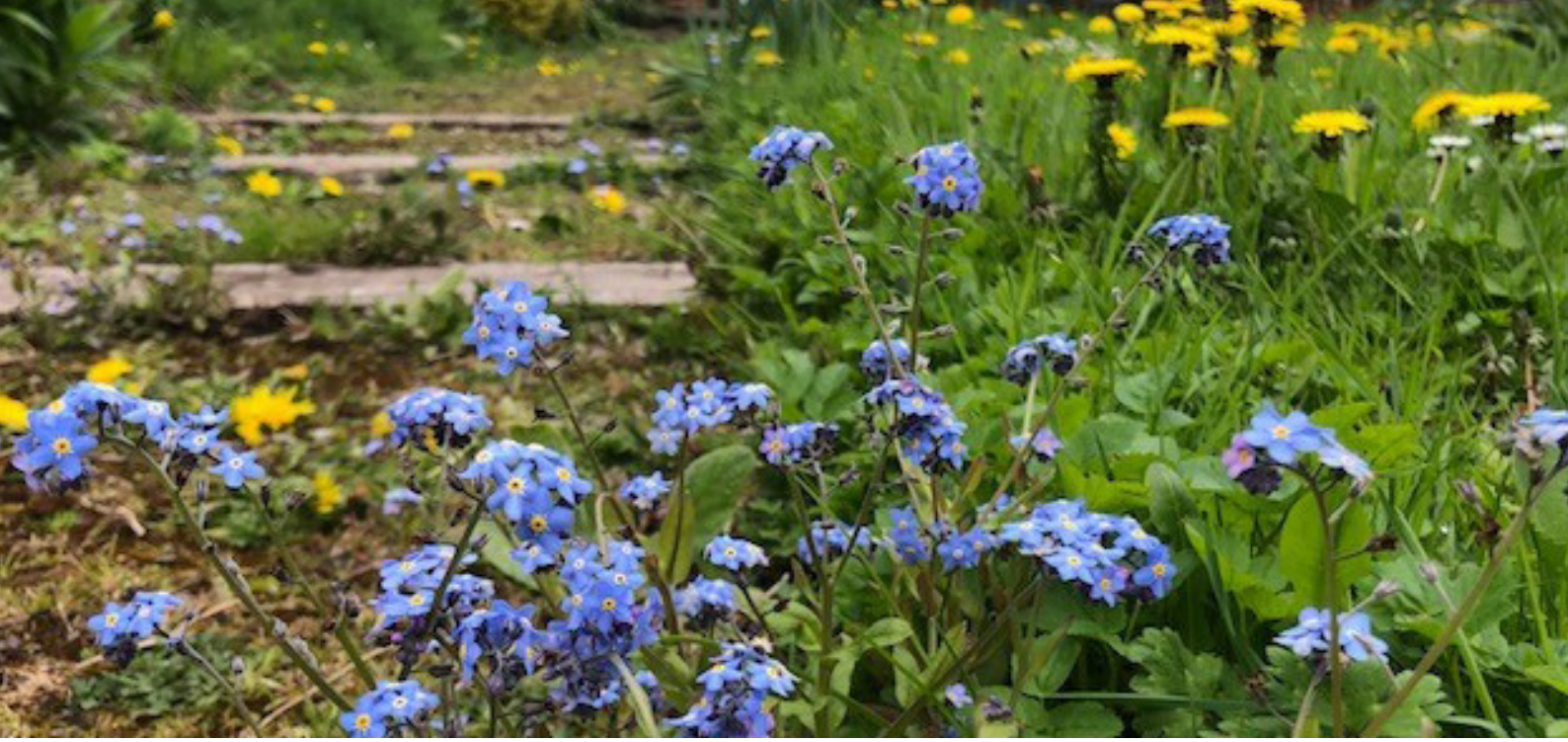
Common garden wildflowers, like buttercups, daisies, dandelions, Selfheal and White Clover will attract insects to your garden; so, jump on the "No Mow May" bandwagon and wildlife will thank you for it. You can even extend this no cut period through the summer to late August or early September.

If you prefer your garden a little "tidier" then some uncut areas next to mowed paths are very eye-catching. Areas of tall grass and wildflowers provide a refuge not only for pollinators; Hedgehogs and Blackbirds can forage for food, the stridulations of grasshoppers will add to the buzz of the bees, and these edges will be crucial in our increasingly dry, hot summers when many lawns are left short and brown. If you have the space, you could even create a mini meadow (see B-Lines Fact Sheet 3 - Wildflower-rich Grassland Creation) with a meandering path running through. Good meadows can take a while to get right, but it's very rewarding watching them develop.

Remember!

When you do cut the grass, always remove the cuttings, as wildflowers grow better in low nutrient soils and leaving cuttings means that as they dry and rot the nutrients go back into the soil. If there are too many nutrients, large, competitive grasses, docks and nettles can take over and smother the flowers and finer grasses.

© Rachel Richards



A wilder green space

We are all different, some like things very tidy, others less so, but in the garden, and any green space, even a small amount of scruffiness can be beneficial for wildlife. Manicured lawns provide negligible food or cover for invertebrates, as regular cutting does not allow most plants to flower, set seeds or develop structure. Here are a few suggestions on how you can make your garden a little wilder.

Deadwood

Sticks, branches and logs left in different locations, (full, partial sun, and shade) will be used by different species of invertebrates. Many beetles depend on dead wood, which is food for their developing larvae, as do solitary bees and wasps which reuse beetle holes to build their nests. Many solitary wasps will feed on aphids and other garden pests, so, provide a home for bees and wasps (which prefer logs in a sunny location), and they will pollinate your plants and carry out pest control without the need for any harmful chemicals.

Ponds and wet habitats

Even a small pond in an old container can attract wildlife to your garden. Ponds provide much needed water for all sorts of wildlife, from birds and Hedgehogs to flies and wasps. Always provide a safe way in and out with a shallow sloped edge and incorporate some water-loving plants. Marsh Marigold, Water Avens, Angelica, mint (beware it can be very invasive), Purple Loosestrife and Water Crow-foot are popular with many insects. In larger spaces ditches and seasonal pools can be designed to support wildlife including dragonflies and hoverflies (including their larvae). Remember if you are creating or topping up a pond use rainwater, not tap water.

Bog garden

A leaky pond or a regularly waterlogged area in your garden needn't be a nuisance, it provides the perfect conditions for creating a wildflower-rich bog garden. Whether you are incorporating your bog into a pond feature or making a standalone bog, the first step is to create waterlogged conditions. Simply digging a hole, putting down a liner with a few holes in with a layer of gravel over the top, and then adding the soil back in will help retain water. You can then add moisture-loving plants, as mentioned in the pond section, as well as other natives like Hemp-agrimony, Meadowsweet, Ragged Robin, Forget-me-not and Lesser Spearwort.

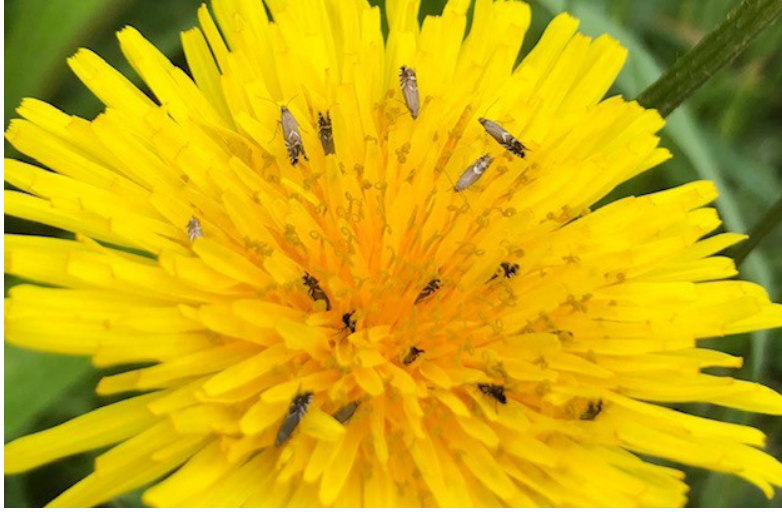
Nettles, thistles and brambles

These are often considered to be weeds, but a weed is essentially a wildflower in a place that we don't want it. You may not want these plants all over your garden but leaving a small patch of nettles in a shady corner is a big win for the caterpillars of Peacock (*Aglais io*), Red Admiral (*Vanessa atalanta*) and Comma butterflies (*Polygonia c-album*). You could leave a few brambles to flower and fruit in a chosen corner, and perhaps a scattering of thistles for the bees and butterflies. Leave the seeds for birds, or dead-head some if you're worried that they will spread too much.

Uncut areas

Leave a small area of long grass, maybe one edge of your garden or meadow, uncut. These long areas can be used by overwintering insects like spiders, beetles and bumblebees, and then again as nesting habitat in the spring before fresh vegetation has had a chance to grow. The following year, leave a different area uncut to prevent one area becoming overgrown and dense. Dead, hollow bramble stems and other hollow stems in sunny locations can be used as a nesting site for solitary bees and wasps, with the larvae overwintering in them and emerging as adults the following spring.

Large Skipper (*Ochlodes sylvanus*) © Liam Olds



Cockfoot Moth (*Glyphipterix simpliciella*) © Rachel Richards

Make your own wildflower meadow

A wildflower meadow is a really rewarding project to have in your garden, and they provide lots of flowers and shelter for invertebrates. There are a few key things to consider when creating a meadow.

What is already there?

Before sowing seed take a look at what you already have. If you are starting out with a lawn that has been mown regularly you may already have some wildflowers present; allow things to grow and carry out a survey, you might find you don't have to add any seed at all.

Do you have lots of 'weed' species?

If you have lots of nettles, docks or long lush grass (like Rye grass) then you may have very nutrient-rich soil which wildflowers do not like. It would be worth taking a soil sample. Garden centres should supply kits. If your soil is very fertile (phosphorous index over 2) you may need to remove the top layer (3-6 inches) of soil to reduce the fertility before you start sowing. Alternatively, as this can be a big job, if you remove the cuttings every time you cut, you will gradually reduce the nutrient levels.

What flowers should I go for?

If you have decided that you will need to add some seed or plug plants to your chosen area then you will need to think carefully about what species to sow. Many "wildflower" seed mixes include non-native plants, others are composed entirely of annuals like poppies. Annuals can look very colorful but need to be resown each year if they are to do well and may only flower for a short section of the summer. Non-natives may be appropriate in a garden or public urban green space but where possible keeping wildflower areas as wild and as native as possible is the best thing for our insects. Visit a local nature reserve meadow or look at some local wildflower-rich road verges and find out which wildflower species grow near you, then use what you have discovered to tailor a suitable seed mix for your wildflower meadow.

When should I sow my meadow?

Autumn is the best time to sow wildflower seed as this is when it would naturally fall in the wild. The ideal time is from mid-August to the end of September. Many seeds require a period of cold to help break the seed dormancy allowing germination to take place. If you are using plug plants, sowing in autumn allows more time for them to become established and should require less watering effort. If you do seed and plant in spring just make sure that plants don't dry out before they become established.

What ground preparation do I need to do?

Before seeding an area cut the existing vegetation back as short as possible, removing the cuttings from the site. If you are enhancing a species-poor meadow with tussocky grasses you may leave one edge uncut for overwintering invertebrates. Once the area is short scarify or rake it to open up bare areas where there will be less competition between sown seeds and existing vegetation. Then spread your seed, either by hand or for a larger area use a tractor-drawn seeder. Details of seed application rates are provided by suppliers. Cover the seed over gently by hand with a little soil, or, if working at a larger scale then roll it to ensure good seed to soil contact.

See B-Lines Fact Sheet 4 for recommendations on managing your meadow.

Let people know what you are doing and why

If you are working in a community green space people are bound to wonder what is going on. If you are able, put up a sign explaining what is happening, encourage them to visit and enjoy the flowers and watch the visiting insects.

Wasp Beetle (*Clytus arietis*) © Lucia Chmurova

Additional resources

Gardening - Buglife

Gardening for Bumblebees - Bumblebee Conservation Trust

Grass seeds for Lawns & Paddocks

Find out if you are on a B-Line and help your local pollinators. Why not add your contributions to our interactive B-Lines map:

www.buglife.org.uk/our-work/b-lines

Front cover photos: Hairy Yellow-face Bee (*Hylaeus hyalinatus*) © Will Hawkes and Hay meadow © Lucia Chmurova

buglife.org.uk | **info@buglife.org.uk** | **@buzz_dont_tweet** | **Buglife** | **buglife_ict**

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