



Your **wild bee** action pack

Get your garden buzzing for bees



Royal
Horticultural
Society

Sharing the best in Gardening

Find more information at
wildaboutgardens.org.uk

Bee aware

Did you know that bees provide us with every third mouthful of food we eat? Without bees, we would be unable to grow lots of our favourite foods, including tomatoes, blueberries, strawberries and green beans. They also contribute over £650 million a year to our economy! As well as being fascinating insects, these creatures are a vital part of our world and need our protection.

Why wild bees?

While the famed honeybee is an excellent pollinator, here we've focused on the equally valuable wild bees, which includes bumblebees and solitary bees. There are some populations of honeybees that are wild, but the majority are kept in managed hives.



Threats to our wild bees

It's no secret that many pollinators are facing threats. Insensitive land use, including fragmentation and loss of habitat, reduction in plant species diversity and the use of insecticides and herbicides have all been linked to declining bee numbers. This is bad news for us and for them.

Bees rely on a diverse range of landscapes to find food and shelter, from meadows to heathland, hedgerows and field margins to urban gardens and parks.

Where the wild things grow

Wildflower meadows are a great source of nectar-rich food for many bee species, as well as a place to shelter and nest. But shockingly, between the 1930s and 1980s, 97 per cent of lowland meadow was lost in England and Wales – an area of 64,000 square kilometres¹. During the same period, thousands of miles of hedgerows and field margins were removed from the countryside.

Make a beeline for your garden

But it's not all doom and gloom! The busy work of gardeners means some species of bee are doing well. Gardens and community green spaces help to reconnect fragmented pollinator habitats, effectively increasing the foraging areas for bees. Not only that, by taking small actions, your garden can serve as a fantastic habitat for a wide range of species throughout the year.

Your patch is part of a huge network of 15 million gardens that criss-cross the UK. Put together, they cover 667,000 acres – an area seven times the size of the Isle of Wight! Think of the difference this could make for nature if each was cared for in a wildlife-friendly way.

This booklet is full of ideas to help make your garden even more bee-friendly.

Bumbling around?

When you think about bees, bumblebees are probably what buzzes to mind. But did you know there are actually 24 species of bumblebee in the UK? They can be found from the south coast to the Shetlands, and it's a true sign of spring for all of us when these fuzzy creatures are spotted zipping from flower to flower.



Lifecycle and nesting

After spending the winter in sheltered places, the queen emerges to find a suitable spot for a new nest. You'll often see the royal ladies in March and April, zig-zagging low to ground, looking for a place to make a home.

Fussy homemakers

Unlike solitary bees, bumblebees do not generally make use of artificial bee nest boxes. They create their own nests, varying in size, often in an old mouse hole underground, in loft space, compost heaps or bird boxes. Nests are non-damaging and will only be active for one season, so don't worry if you find one in your loft! While honeybees make beautiful, distinctive combs, bumblebees build a misshapen, messy-looking nest.

Once a queen has found a suitable spot, she collects nectar and pollen. She mixes the pollen with a waxy secretion to form a small mound, on which she lays the first batch of eggs. She stores nectar in structures in front of the pollen mound. The queen incubates the eggs, by 'shivering' her muscles and feeds on the nectar.

A new generation

After a couple of weeks, the fully grown grubs spin a cocoon and pupate, emerging as adults a few days later. These worker bees are all female and take over the collection of nectar and pollen and rearing of the larvae. Males and new queens are produced later in the season.

All the worker and male bees will die off during late summer or autumn but in some warmer areas, buff-tailed bumblebee queens start a new colony, remaining active throughout the seasons. Occasionally there can be two generations of 'nest' a year.



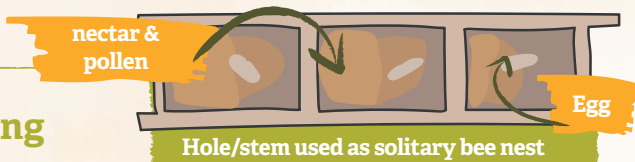
Flying solo

Solitary bees are heroes of the pollinator world. There are over 200 species of these pollinators in the UK. Unlike bumblebees and other social bees, each female makes her own nest and there are no workers. However, many females may nest in close proximity to each other.

Lifecycle and nesting

Different solitary bees use different nesting materials and sites.

Unlike the queen bumblebee, solitary bees raise their offspring alone. She will lay each egg in an individual cell, separated by walls built out of the material favoured by the species of bee. Each cavity will be filled with provisions of enough nectar and pollen to support the development of the larvae.



Eggs that become female bees are often laid first, at the back of the cavity, with eggs that become males laid at the front of the nest. This is because males often emerge before females in the spring.

Here's a closer look at two solitary bees you might see in your garden.



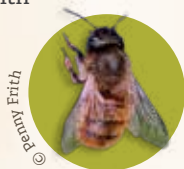
Red mason bee

Small but mighty, these amazing bees build their nests in hollow stems, holes in cliffs and in gaps in the walls of buildings. They create cells separated by a tiny wall of mud in which the larvae develop and the female bee will often fill the space with as many cells as will fit.

These enterprising critters don't weaken mortar, but take advantage of mortar that has already softened.

The way they shape the mud for their tiny nests gives them their name 'mason'. The 'red' part comes from their thick ginger hair.

After the eggs hatch the larvae feed on the nectar and pollen, and when fully grown they pupate within the cell. You can see the adult bees around and about from late March until June.



Leafcutter bee

Incredibly crafty, these bees cut little circles out of plants and glue them together with their sticky saliva to create miniature nests in which they lay their eggs. Look out for the characteristic holes in garden leaves, especially roses. This bee can be seen from April to August and like the red mason bee, only eats pollen and nectar.

They can appear similar to honeybees, however the underside of the leafcutter's abdomen (the rear part of an insect's body) is usually covered in tufted orange or yellow hairs, unlike the honeybee. There are seven species of leafcutter bee in the UK, and they are similar in appearance.



Fantastic facts about wild bees

Queen bumblebees

are one of the earliest pollinators
to emerge in spring

They can **vibrate and warm up** their flight muscles
enabling them to fly in cooler weather

Tree bumblebees

arrived in the UK around a decade ago
and are now widespread.

You may even find them **nesting in a bird box**
in your garden

There are between

200-500

individuals in a **nest of bumblebees at its peak**

A foraging bumblebee
with a **full stomach**
is only ever about
40 minutes
from starvation

Some bumblebees, like honeybees, are
'nectar robbers'!

Instead of pushing their bodies into the flower
to reach the nectar, **they cheat by cutting a hole**
in the base of the flower.

Bumblebees are known
for nesting in strange
places – **ests have been**
found under a disused
lawnmower and inside
a rolled-up carpet



Leafcutter bees cut their
nesting materials from
plants. Some species have
a liking for roses

Bumblebees

collect pollen to take back to the hive in
'pollen baskets'
on their back legs



© Jon Hawkins

Welcoming **wild bees** into **your garden**

© Chris Lawrence

1 Plant nectar and pollen-rich flowers

Have a look at the RHS Perfect for Pollinators lists for inspiration:
rhs.org.uk/perfectforpollinators



2 Create and protect potential nesting sites

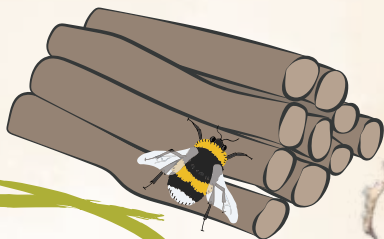
Different species choose a variety of places to set up home (see p8-9). Try the activity sheet on p13 to make your own solitary bee home.

3 Provide both long and short grass

Both serve as potential nesting sites for different species of bee.



© Rachel Scopes



4

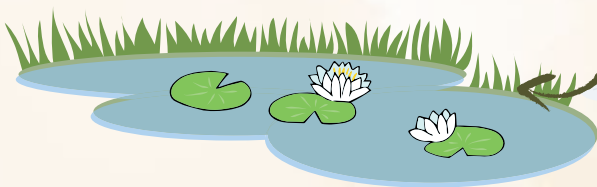
Encourage natural predators

Try to avoid chemicals like pesticides or fungicides in your garden. Instead, encourage natural predators. Log piles are great for beetles, as are compost bins, which also take care of your food waste!

5

Provide a water source – bees need to drink too!

Can you create a wildlife pond? Or alternatively, how about a pot sunk into the ground or a bird bath containing a few submerged rocks to enable bees to reach the water?



6

Help out a tired bumblebee

If you see a bumblebee on the ground it's likely to be tired and in need of food. You can help by mixing sugar with water, placing on a teaspoon and leaving it in front of the bee. Once it's eaten its fill, it will 'bee' on its way.

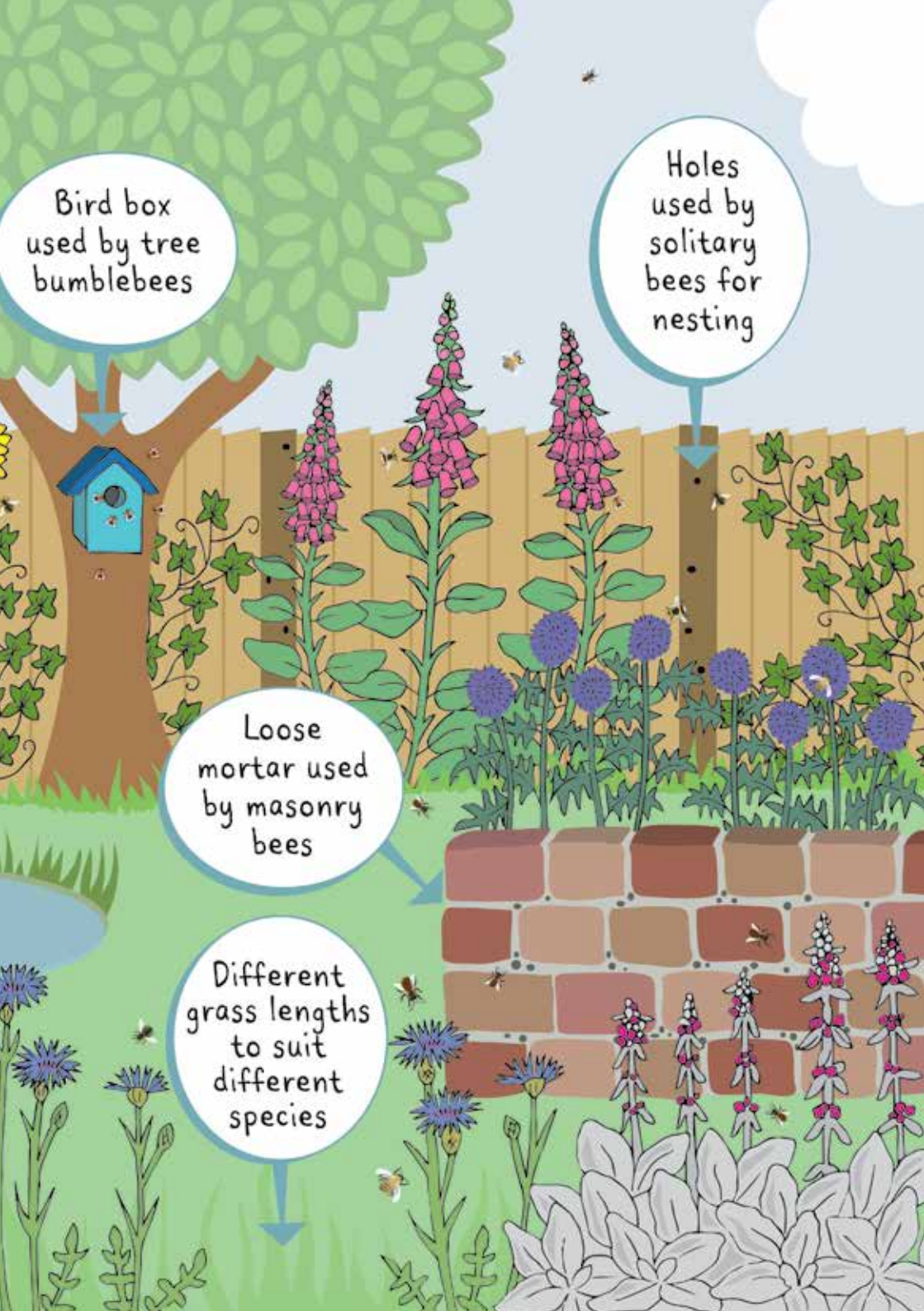


Solitary
bee nest

Nectar and
pollen-rich
flowers for
hungry bees

Signs of
leafcutter
bee activity

Bumblebee
nest in old
mouse hole



Bird box
used by tree
bumblebees

Holes
used by
solitary
bees for
nesting

Loose
mortar used
by masonry
bees

Different
grass lengths
to suit
different
species

Flower power



Get your garden buzzing year-round with these nectar and pollen-rich plants

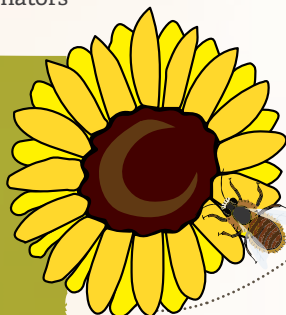
The best way to help wild bees and other pollinators in your garden is to provide them with a range of foraging opportunities! Early spring to late autumn is the busiest feeding time for bees, but some winter-flowering plants can provide forage in areas where some species remain active throughout the year.

Avoid plants with double or multi-petalled flowers as they may lack nectar and pollen and can also be hard for bees to access. **Avoid pesticide use wherever possible, and never use on plants when they are in flower.**

For a list of recommended nectar and pollen-rich plants have a look at the RHS Perfect for Pollinators lists: rhs.org.uk/perfectforpollinators

Key

- A** Annual (only lasts one year)
- Bi** Biennial (lasts two years, flowering in its second year)
- Bu** Bulb (comes up every year from a bulb)
- Cl** Climber (needs support to climb up)
- P** Perennial (dies down in winter but comes back every year)
- S** Shrub (keeps a woody structure year round)
- T** Tree (needs more space and may grow tall)



© Jon Hawkins



Spring

- T** Crab apple (*Malus*)
- P** Lungwort (*Pulmonaria officinalis*)
- A Bi** Honesty (*Lunaria annua*)
- P** Hardy geranium, cranesbill (*Geranium*)

Summer

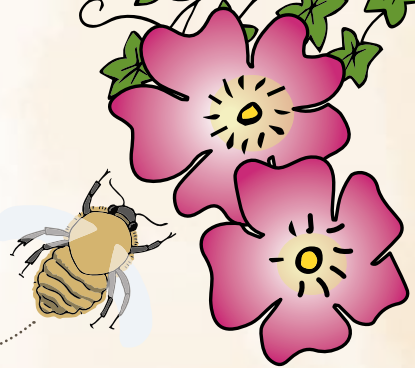
- P** Bergamot, bee balm (*Monarda didyma*)
- A** Borage (*Borago officinalis*)
- A** Cornflower (*Centaurea cyanus*)
- P Bi** Foxglove (*Digitalis purpurea*)
- P** Globe thistle (*Echinops ritro*)
- P** Ice plant (*Sedum spectabile*)
- A** Poached-egg plant (*Limnanthus douglasii*)
- A** Sunflower (*Helianthus annuus*)

Autumn

- P** Common bistort (*Persicaria bistorta*)
- Cl S** Common ivy, English ivy (*Hedera helix*)
- A P** Dahlia (*Dahlia*)
(needs frost-free to overwinter)
- S** Hardy fuchsia (*Fuchsia*)

Winter

- S** Oregon grape (*Mahonia aquifolium*)
- S** Shubby honeysuckle (*Lonicera x purpusii*)
- Ba** Winter flowering crocus (*Crocus*)
- P** Winter-flowering hellebore (*Helleborus* sp)



Bee Identification



All
bumblebees
shown are
worker
bees











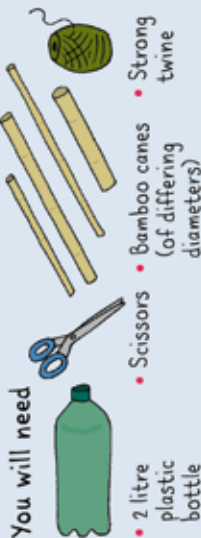
 14-17mm	 12-18mm	 11mm	 10-16mm	 12-18mm
<input type="checkbox"/> Buff-tailed bumblebee	<input type="checkbox"/> Willughby's leaf cutter bee	<input type="checkbox"/> Red mason bee	<input type="checkbox"/> Tree bumblebee	<input type="checkbox"/> White-tailed bumblebee
 13-14mm	 10mm	 13mm	 13mm	 14-15mm
<input type="checkbox"/> Red-tailed bumblebee	<input type="checkbox"/> Tawny mining bee	<input type="checkbox"/> Common carder bee	<input type="checkbox"/> Wool carder bee	<input type="checkbox"/> Hairy footed flower bee

Illustration: Corinne Welch © copyright Royal Society of Wildlife Trusts 2017

How To Make A Solitary Bee Nest

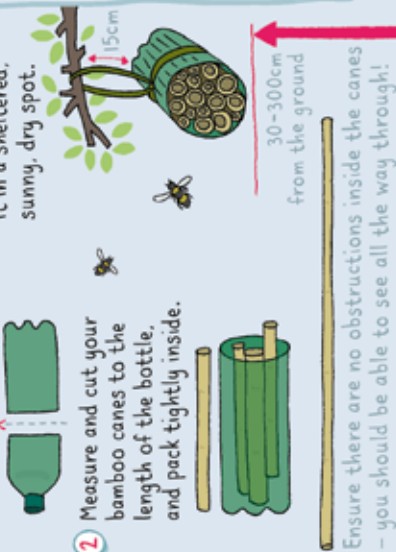
The bottle method

You will need



- 2 litre plastic bottle
- Scissors
- Bamboo canes (of differing diameters)
- Strong twine

- 1 Cut off the top (lid) half of your plastic bottle.
- 2 Measure and cut your bamboo canes to the length of the bottle, and pack tightly inside.
- 3 Tie the twine around the bottle, and hang it in a sheltered, sunny, dry spot.



Ensure there are no obstructions inside the canes – you should be able to see all the way through!

The wood block method

You will need



- An untreated block of wood
- Saw
- A drill with varied sizes of wood bit (2mm to 10mm)
- Hammer
- Strong twine

- 1 Cut your block to 10cm x 10cm x 10cm.
- 2 Drill different sized holes, evenly spacing them across one side of the wood. The holes should be as deep as possible but not go right through the wood
- 3 Hammer a nail into the top of each side, and create a hanging loop with the twine.
- 4 Hang the block in a sheltered, sunny, dry spot.



30-300cm from the ground

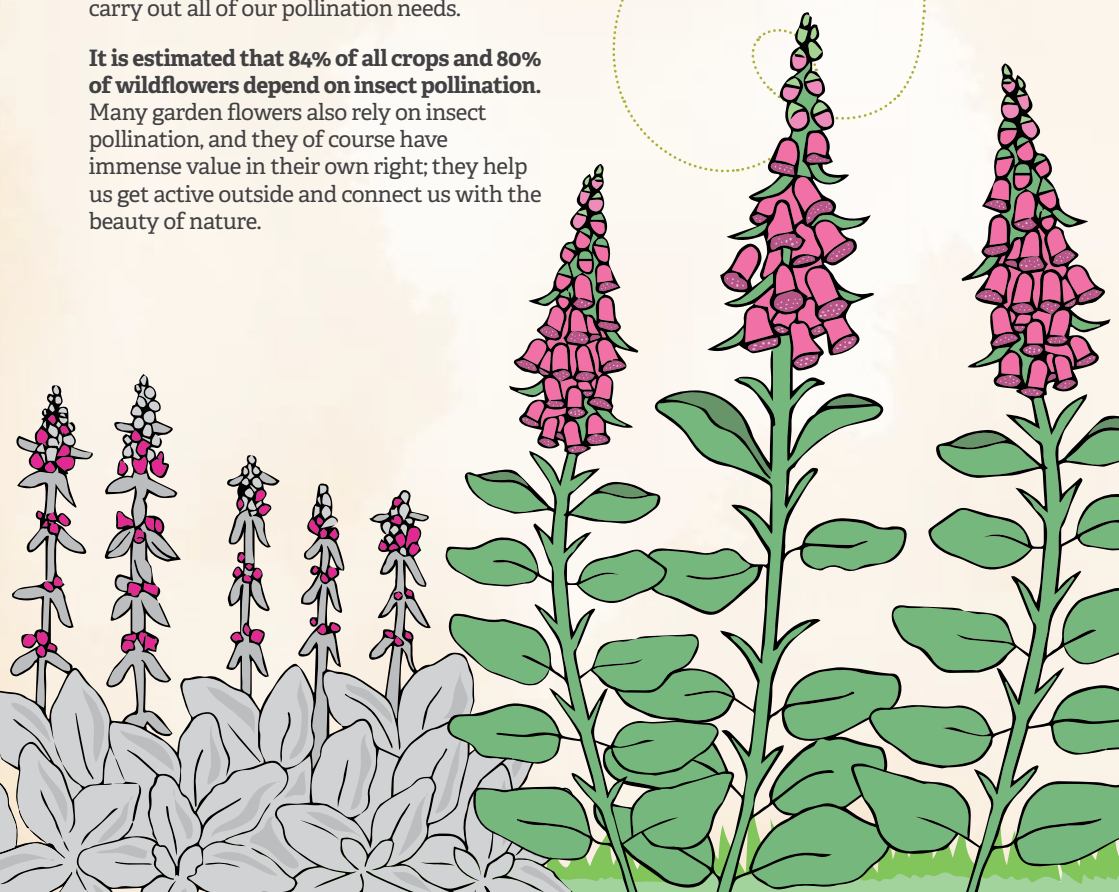
Walk on the **wild side**

The value of wild bees

Many people know about the role honeybees play in supporting our food chain, but solitary bees and bumblebees also provide an important service, pollinating crops such as apples, squash, strawberries, field beans, oil seed rape and potatoes. Honeybees are not the most effective pollinators for all crops, and there are not enough of them to carry out all of our pollination needs.

It is estimated that 84% of all crops and 80% of wildflowers depend on insect pollination. Many garden flowers also rely on insect pollination, and they of course have immense value in their own right; they help us get active outside and connect us with the beauty of nature.

© Rachel Scopes



A buzz of activity

National pollinator projects



Polli:Nation is a national citizen science project to promote pollinator-friendly gardening. Survey your garden or community green space, make some improvements for pollinators and then re-survey the spot to show the difference you've made.

opalexplorenature.org/polli-nation



A new Blooms for Bees app allows you to share your sightings of bumblebees to help identify which plants are most popular amongst different species.

bloomsforbees.co.uk



Buglife's B-Lines project is creating and restoring 'insect pathways', a series of wildflower-rich habitat stepping stones across the country. B-Lines aims to create and restore at least 150,000 hectares of flower-rich habitat across the UK.

buglife.org.uk/b-lines-hub



The Bumblebee Conservation Trust is carrying out a range of projects to research and protect all our bumblebees.

bumblebeeconservation.org



Coronation Meadows, an initiative by Plantlife and The Wildlife Trusts, is sprouting pollen-rich meadows in every county. You can find out more at wildlifetrusts.org/bees

The National Pollinator Strategy was launched by the British Government in 2014 in partnership with the Wildlife Trusts, the RHS and others, with a 10-year plan to protect the UK's bees and other pollinators wildlifetrusts.org/bees-needs

Sowing the seeds for bee survival

Is there a space in your garden or neighbourhood you could get blooming for bees?

If you have a bare patch in a sunny spot, try sowing a bee-friendly annual mix for a big splash of colour while delighting the bees. Jazz up a boring patch of lawn by introducing some wildflowers. Visit the Wild About Gardens website for more ideas: wildaboutgardens.org.uk



About Us

For more information about how you can help wildlife in your garden, including gardening advice, activity ideas and species guides, visit The Wildlife Trusts and RHS partnership website **wildaboutgardens.org.uk**

The Wildlife Trusts

No matter where you are in the UK, there is a Wildlife Trust inspiring people about the natural world and saving, protecting and standing up for wildlife and wild places near you. We believe that people are part of nature; everything we value ultimately comes from it and everything we do has an impact on it.

Supported by our 800,000 members, together The Wildlife Trusts care for 2,300 diverse and beautiful nature reserves. Many Wildlife Trusts run projects to specifically address the decline in pollinators, and to raise awareness of bees. You can find out more about some of these projects and download our educational resources at **wildlifetrusts.org/bees**.

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The Royal Horticultural Society

For more than 210 years, the RHS has been the force behind gardening in the UK. We're driven by a desire to enrich everyone's life through plants, and make the nation a greener, more beautiful place.

We believe that everyone in every village, town and city should benefit from growing plants to enhance lives, build stronger, healthier, happier communities, and create better places to live.

Our work in education, science and communities is only possible thanks to the generous support of our visitors, members, partners, donors and sponsors. With your help we can harness the power of horticulture, one gardener at a time.

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