



# Wild About Gardens

#wildaboutgardens

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# Bring back our **beetles**

Discover the UK's beetles and how you can help them



# Brilliant beetles

Beetles (in the order *Coleoptera*) make up more than a third of all known species on earth – that's around 400,000 worldwide. In the UK alone there are more than 4,000 species, and you can find them in almost every habitat, all year-round! Although a handful may eat your plants, beetles are a vital part of a healthy garden.

Not only do beetles come in an amazing variety of colours, sizes, and shapes - they are also important predators, they act as food for larger animals (such as hedgehogs and birds), and pollinate our flowers and crops. They even help to recycle nutrients, by eating and digesting plants and returning their goodness back to the soil.

In this booklet you'll discover some of the threats beetles are facing, learn about their weird habits, and of course, ways you can help. We'll even bust some myths!

## What is a beetle?

Beetles are insects with hardened front wings, although you'd be forgiven for not realising this as they are often seen crawling around rather than flying. The wing cases protect the second (hind) pair of wings and are called 'elytra'.

## Beetles you didn't know were beetles...

Not all beetles have the word 'beetle' in their name. Here's a few you may not have guessed belong here:



Weevils



Glow-worms



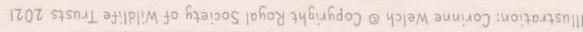
Ladybirds



Devil's coach horse

Weevil © Margaret Holland Glow-worm © John Tyler Ladybird © Jon Hawkins Surrey Hills Photography Devil's coach horse © RHS

# Beetle spotting sheet

 Male	<input type="checkbox"/> Thick-legged flower beetle		<input type="checkbox"/> Red-headed cardinal beetle
	<input type="checkbox"/> Cockchafer		<input type="checkbox"/> Green tiger beetle
 Male	<input type="checkbox"/> Stag beetle		<input type="checkbox"/> Sexton beetle
	<input type="checkbox"/> Lily beetle*		<input type="checkbox"/> Devil's coach horse
 Male	<input type="checkbox"/> Rhinceros beetle		<input type="checkbox"/> Rose chafer

\*not native to the UK

Stag beetles are only found in South East England.

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Cover image: Cardinal beetle © Penny Frith  
Ladybird © Jon Hawkins Surrey Hills Photography

# Beetles under threat

Sadly many of our beetles are struggling, and here's why...

## 1 Loss of habitat

The way we use our land in the UK, from intensive farming to urban development, has led to shrinking patches of habitat for beetles, making it difficult for many populations to survive. But by following the activities in this booklet you can create more places for our precious beetles to live!

## 2 Loss of connected habitats

As well as getting smaller, habitats are becoming more fragmented, with less connection between them. That's why our gardens can make a huge difference – not only are they important habitats, they can also provide corridors for beetles to pass through until they find the perfect spot.

## 3 Climate change

Climate change is having an impact on all wildlife and beetles are no exception. Warming temperatures and shrinking habitats can mean beetles struggle to survive where they once thrived, and of course this causes problems for the other animals and plants that rely on them, too.

## 4 Pesticides

The use of pesticides is resulting in serious declines across lots of invertebrates, including many beetles. Even pesticides that aren't intended to target beetles can harm or kill them, so it's important to avoid using them.



Sexton beetle © Derek Moore

# Alternatives to using pesticides in your garden

1 To get started, try to learn as much as you can about the sort of invertebrates that may feed on your plants. Consider if they really pose a threat, or whether they help contribute to a balanced, healthy garden. If co-existence is out of the question, there are many ways to control unwanted visitors whilst avoiding pesticides that can cause unintended harm to beetles and other creatures in your garden.

2 Tolerating some nibbled leaves and even a few aphids will encourage a balanced garden where damage does not get out of hand.

3 Encourage natural predators such as predatory beetles and other invertebrates, hedgehogs, birds, and frogs by creating food and shelter for them in your garden.

4 Plant the right thing in the right place – stressed plants are more likely to succumb to damage.

5 Pick up and move any invertebrates that might be nibbling crops a little more than you'd like during the spring and summer; checking after rainfall for slugs and snails can help too!

To learn more about the threats beetles are facing, how to avoid using pesticides and herbicides, plus other ways you can help, download The Wildlife Trusts' guide to taking #ActionForInsects: [www.wildlifetrusts.org/take-action-insects](http://www.wildlifetrusts.org/take-action-insects)



Mint beetle © Amy Lewis

# Fascinating beetle facts

We have over 60 species of **dung beetle** here in Britain and, true to their name, most eat dung. This makes them a vital part of the ecosystem, particularly on farms, where they keep the soil healthy – in fact, they're estimated to save the British cattle industry at least £367 million per year!

**Asparagus beetles** and **lily beetles** let out a high-pitched squeak when under threat, though they may also use this to communicate with each other, too.

The flightless **bloody-nosed beetle** gets its name from the blood-like red liquid that oozes from its mouth when threatened, activated to scare off predators.

If **click beetles** are upturned, they arch their backs to create tension in a special hinge in their thorax, which when released lets out a loud click. This action hurls the beetle into the air at speeds of more than 2-metres per second, helping them to get back on their feet or out of harm's way.

When female **pot beetles** lay eggs, each is covered in a shell made up of her droppings. Once the eggs hatch, the larvae use their own droppings to enlarge this protective 'pot', keeping them helpfully hidden from predators until they're fully grown.

Click beetle © Margaret Holland

# Beetles and your garden

Beetles bring balance to your garden

- ✓ Beetles support lots of garden life; for example the often maligned lily beetle provides food for three parasitoid wasps that feed inside its larvae.
- ✓ Many ground beetles feed on a range of invertebrates – from springtails to vine weevil grubs.
- ✓ Rove beetles are vital predators: the big eyed *Stenus* species can walk on water and use extendable mouthparts to prey on springtails!
- ✓ Glow worm larvae and snail hunter ground beetles can come in handy, specialising in eating snails.
- ✓ Water beetles are important predators too: smaller species eat mosquito larvae, while larger species can feed on dragonfly larvae and tadpoles, helping the pond to find a natural balance.

## They also clean up!

Some beetles such as **rose chafer grubs** help clear up dead plant waste, while many help to break down dead wood, including the **rare violet click beetle**, found only in three sites in the UK.

Some, such as **dermestid beetles**, feast on the last remnants of flesh on dead animals, leaving a clean skeleton, while **sexton beetles** bury dead animals and feed their grubs on the regurgitated remains!

Then of course, there are the aptly named **dung beetles** which feed on animal waste, and are most commonly found in woodland or farmland.

A dor beetle, a type of dung beetle © Vaughan Matthews



# Build a beetle bank

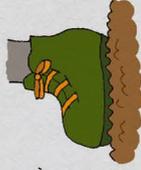
## You will need

- Stones or garden hose
- Topsoil
- Wheelbarrow
- Spade
- Grass seed or wildflower meadow seed (with 80% grass) or turf

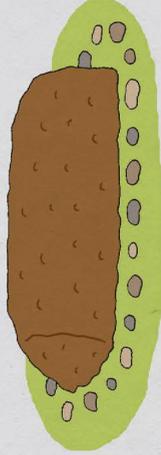
1 Pick a sunny spot for your beetle bank (ideally around 1m long) and mark it out with straight or curved lines using stones or a garden hose.



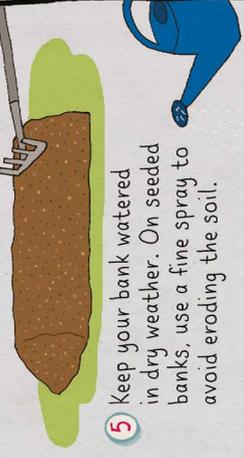
2 Spread the topsoil evenly inside the markings, treading it down after each 10-15cm deep layer to compact the soil.



3 Keep building a mound until it is at least 30cm high and wide. The top can be flat or rounded.



4 Once you have created your mound, sow your seed and firm it down with the back of a rake. If using turf, lay this over the mound and firm down.



5 Keep your bank watered in dry weather. On seeded banks, use a fine spray to avoid eroding the soil.



6 Let the grass grow long all summer. Cut it back in October to approx. 5cm high.



Look out for minibeasts – from busy ants to scurrying beetles, grasshoppers and even small solitary bees!

# Make a dead hedge

## You will need

- Thick garden gloves
- Woody trimmings from pruning trees, shrubs or hedges, including several thick, long branches or stems
- Loppers
- Mallet
- Small axe or billhook

These structured piles of branches and twigs serve a whole host of species but, as the material rats away, it makes for the perfect residence for beetles! You could use your 'hedge' as a garden boundary, or just to divide up an area of your garden or green space. Your hedge should be at least 1.5m long, roughly the length of a fence panel.

1 Select the straightest, sturdiest branches to form into upright stakes and angle on one end using a small axe or billhook. Garden stakes work well if your branches aren't thick enough.

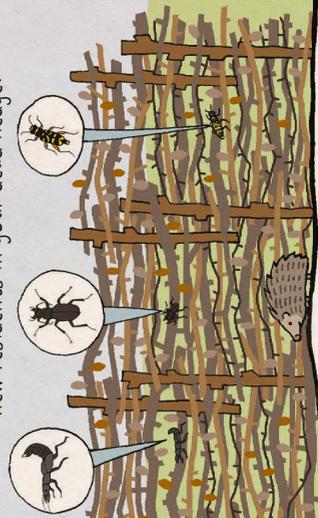
2 Use the mallet to drive stakes into the ground every 50cm, pointed end down.

3 Drive in a second row of stakes 30-50cm away from your first row so you have two parallel rows.



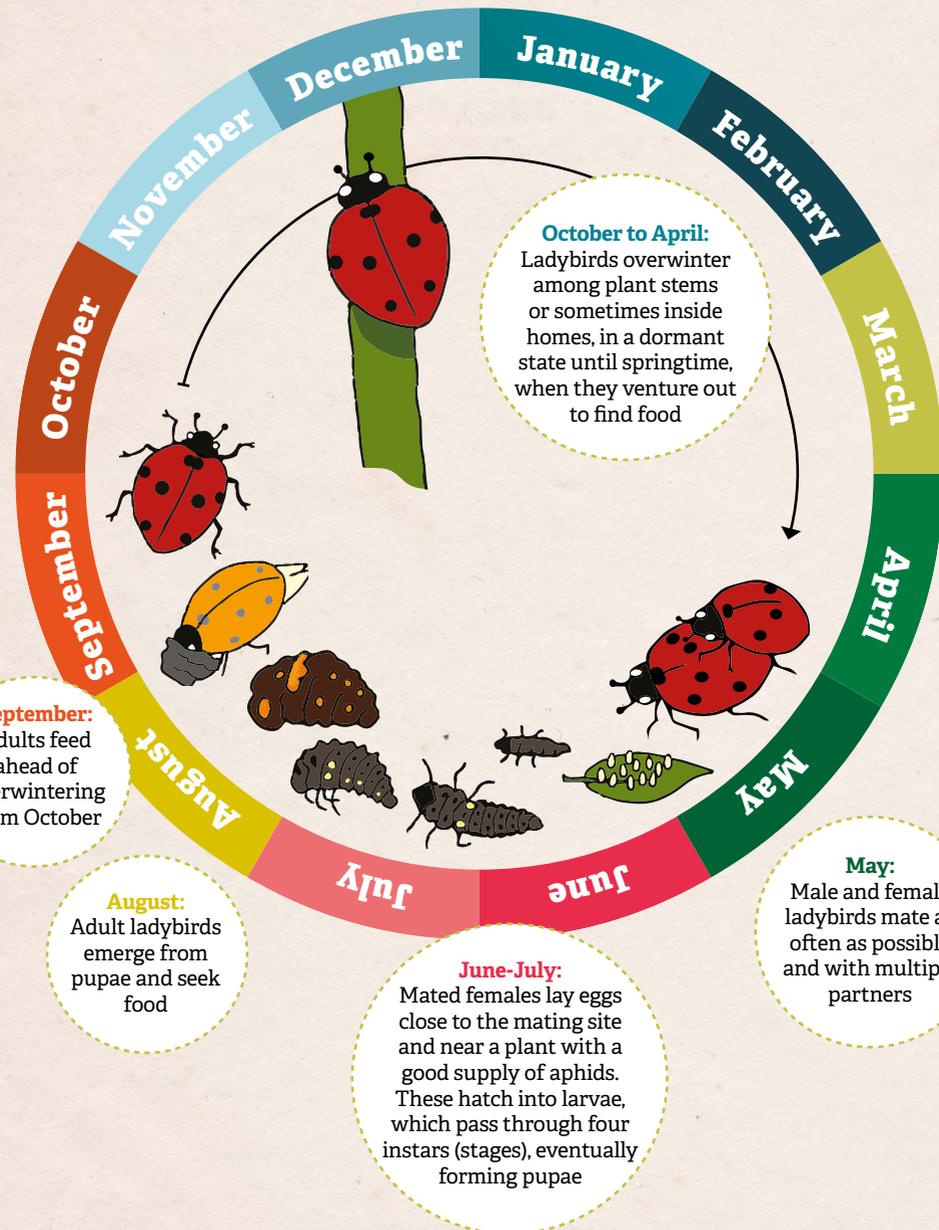
4 Weave remaining branches and trimmings in and out of the stakes, or simply pile them up in the gap between the two rows. Continue until you've built your hedge up to a good height.

5 As the hedge starts to decompose over time, top it up with branches or trimmings. Keep an eye out for new residents in your dead hedge!



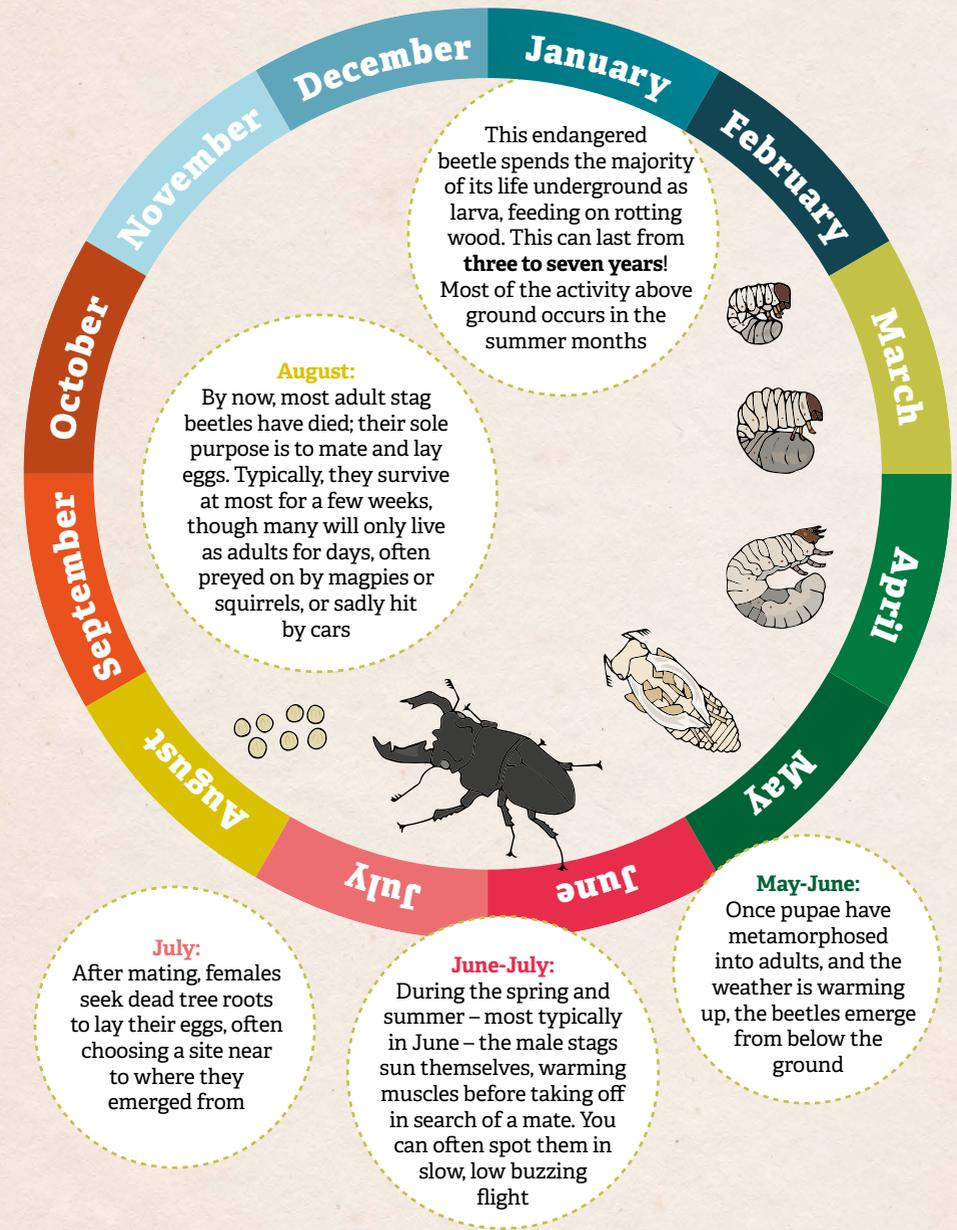
# A year in the life of...

the 7-spot ladybird



# A year in the life of...

a stag beetle



# Make a beetle bucket

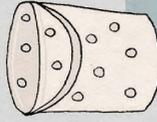
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## You will need

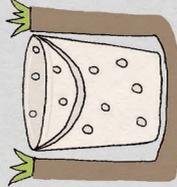
- A bucket, trug, or other durable, upcycled container
- A small craft knife
- Stones
- Bark chips and/or leaves
- Small logs (that will fit in your container when upright)
- A spade

Fill a bucket with rotting wood and leaves and make the perfect home for all sorts of beetles and other insects. Making your beetle habitat in an old plastic container means you can easily find it again to top up or examine the contents (make sure to replace everything straight away after examining).

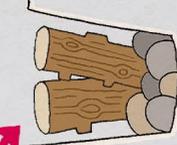
**1** Safely cut small circular holes (around 3cm wide) in the sides and bottom of the bucket for beetles to enter and exit.



**2** Dig a hole just larger than your bucket and sink it into the ground.

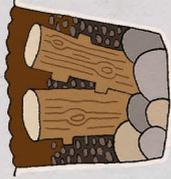


**3** Place some large stones at the bottom of the bucket, then stand some small logs upright on top.



These will rot and make lovely spots for female beetles to lay their eggs.

**4** Fill the rest of the bucket with bark chips and/or garden leaves, leaving around 10cm at the top to fill with some soil dug from the ground.



**5** Top the soil with a couple more logs to tempt in beetles – from above or below!



If you'd rather not use plastic, you can simply make your beetle 'bucket' in a hole in the soil.

Perfect for smaller gardens!

Illustration: Corinne Welch © Copyright Royal Society of Wildlife Trusts 2021

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# Water beetles

Water beetles are an incredibly diverse set of insects. All of them live in water at some point of their lifecycle, and there are about 300 species in the UK alone! If you have a wildlife pond in your garden, no doubt you will have water beetles hanging around. Let's dive into their underwater world...

## Relocation, relocation...

Water beetles can fly, so they can relocate to a new home if their current one isn't quite right. However, many have to wait for a very warm day before they make the move, as otherwise their flight muscles don't work!

## Water breeders

As they mate underwater, the male great diving beetle uses suction pads on its front feet to grip on to the female, whose deeply grooved wing cases help the male to cling on.

## Deep-pond diving

Water beetles come up to the surface every so often to replenish the air supply stored beneath their wing cases. Think of it as an in-built scuba diving tank to enable them to find prey underwater!

## Keen senses

Whirligig beetles are common inhabitants of pond surfaces, easily spotted as they gather in large numbers, circling erratically across the water. They're incredibly sensitive to ripples in the water – these help to guide them towards insects trapped on the surface, which they then eat!



Whirligig beetle © Chris Lawrence

## Are water beetles good for my pond?

Water beetles are part of a healthy pond ecosystem. Many are predatory and can help keep mosquito larvae numbers in check, while larger species, such as the great diving beetle, will eat tadpoles and small fish.



Great diving beetle © Jack Perks

# More ways to help beetles in your garden

There are lots of things you can do to help out the smaller inhabitants of our gardens, and happily, by helping beetles, you are providing for other wildlife too.

Find a place for dead wood in your garden. This could be a dead or dying tree left to stand, a cavity in an old tree, or a pile of old stumps and logs.



Piles of rocks provide daytime shelter for nocturnal beetles, and piles of leaves are also great, as many species like to lay their eggs in decaying leaves.



Make a stumpery in a shady corner of your garden to help feed dead-wood loving beetles, such as the lesser stag, rhinoceros, and longhorn beetles. It will also provide a home for predatory beetles plus lots of other invertebrates and even amphibians.



Cover water butts and provide a route out of ponds for land-living beetles, such as a pebble beach. If you see a dead-looking beetle in water, take it out – they often revive!



Build a compost heap. It will be packed with all sorts of creatures such as rose chafers (for those lucky enough!) in no time.

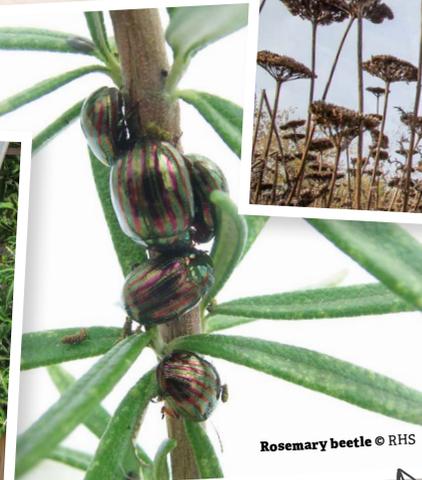


Grow pollen-rich open flowers for beetles – perhaps the world's first pollinators. Beetles such as soldier beetles, the thick-legged flower beetle, longhorns and chafers may pay a visit.

Replace artificial grass with real grass so beetles have a place to live, and try to keep the amount of decking or paving in your garden to a minimum.



Leave cutting back your flower beds until late winter. The dead plant stems will be used by overwintering beetles and other invertebrates such as spiders.



Try to tolerate leaf feeding beetle damage. For example, rosemary and mint beetles may appear in your herb garden, but they rarely cause serious damage and add vibrancy and colour!

For even more ways to take #ActionForInsects, head to [www.wildlifetrusts.org/action-for-insects](http://www.wildlifetrusts.org/action-for-insects)

