



ERCCIS



Cornwall

Invertebrate-friendly Gardening

Our gardens are home to huge range of invertebrates, many so small they are often overlooked. They include everything from worms, slugs and snails to bees, spiders, butterflies and beetles. These 'minibeasts' are fascinating creatures which are an essential part of our biodiversity. Luckily there are lots of simple ways you can help invertebrates and encourage them into your garden.

What's in my garden?

An average garden could hold over 2,000 different species of invertebrate, which may include arachnids (e.g. spiders), annelids (e.g. earthworms), molluscs (e.g. slugs and snails), myriapods (e.g. centipedes and millipedes) and insects. Insects are the most numerous group of invertebrates (and life) on earth and they include true bugs (Hemiptera), dragonflies and damselflies (Odonata), flies (Diptera), beetles (Coleoptera), butterflies and moths (Lepidoptera), ants, wasps and bees (Hymenoptera) and crickets and grasshoppers (Orthoptera)...plus many more!



Attract invertebrates to your garden and larger animals and birds will follow!

A caterpillar is a tasty treat for many birds. Photo: Adrian Davey

Some beneficial invertebrates:

Bees (including honey bees, bumblebees and solitary bees) play a vital role in pollination, carried out as they collect and feed on pollen and nectar from flowers. **Butterflies** help add beauty and interest to a garden. **Ladybirds** and their larvae are the best aphid predators in the garden and munch on other pests such as thrips, mealy bugs and mites. **Lacewing** larvae also feed actively on aphids (and mites, leaf miners, scale insects and small caterpillars), as do the larvae of many **hoverflies**, which are often mimics of bees and wasps and help with pollination when adults. **Ground beetles, spiders** and **harvestmen** prey on a large numbers of pests; web-buildings spiders catch aphids and flies. Although some **bugs** (like aphids) feed on plants, many others are predators. **Centipedes** are fierce predators, eating a variety of pests, and **millipedes** feast on decomposing vegetation. Some species of **slugs** and **snails** can be potential pests but they are extremely important for breaking down organic matter and recycling of nutrients. **Earthworms** are well known for their part in improving soil structure, aerating and draining the soil, and incorporating dead plant material.

Why encourage invertebrates?

It has been said, 'Take care of the invertebrates and the rest will take care of itself!' They are not only an essential part of the food chain, feeding amphibians, reptiles, birds, bats and other mammals; we also depend on them for pollination of many of our crops and native plants, maintaining soil and water quality, breaking down organic matter and recycling nutrients. Despite their reputation, very few species cause significant damage to our prized flowers, fruit and vegetables, and there are many more that actually help to control these pests or have no effect whatsoever. In addition, some species are in serious decline, and by encouraging invertebrates in your garden you can make a real contribution to their survival.



Many bee species have declined in recent years. Photo: Ian French

At least 65% of all species on the planet are invertebrates, with more than 32,000 terrestrial species in the UK alone, and many are critically endangered

Helping out the little guys!

The best way to encourage invertebrates to live in your garden is to provide shelter, nectar, decaying plant material and nesting sites. Here are some ways to help.....

Create diversity

To provide habitats for the greatest variety of invertebrates, aim to create diversity within your garden. Depending on its size, you could incorporate features such as flower borders, lawns including an area of long grass, climbers, shrubs, trees, hedgerows and ponds, using a range of different species to provide lots of micro-habitats. This creates structural diversity, and using a range of different species.

Choose suitable plants

Including native trees and shrubs can be really beneficial if you have the space. Species such as oak, birch, hazel, poplar, willow, rowan and alder all support numerous associated insects. Likewise, native wildflowers often produce more of the required pollen and nectar, are more recognisable to native species, and some butterfly species, for example, require specific host plants for the survival of their larvae. However, many insects are not selective, and by using a mixture of native and cultivated plants of value to wildlife (and suitable for the conditions in your garden) you are likely to attract the greatest number of species.



Small tortoiseshell butterfly
Photo: Adrian Davey

Flowery borders

Choose plants with single flowers that flower at different times of year to ensure that pollen and nectar are available over a long period, and use flowers of different shapes to appeal to different species. Ideally, plant the same species within groups rather than singly, to create a vivid display of colour. Site them in a sunny, sheltered spot against a fence, wall or hedge, or plant them in a container if you're short on space.

Examples of nectar-rich plants for butterflies, bees and other insects:

Early flowering	Summer flowering	Late flowering
Alyssum	Hyssop	Lavender
Polyanthus	Wallflower	Fuchsia
Cowslip	Goldenrod	Ice plant
Grape hyacinth	Lady's smock	Russian sage
Forget-me-not	Marigolds	Michaelmas daisies
Honesty	Field scabious	Ivy
Primrose	Verbena	Purple loosestrife
Dead-nettle	Thyme	Teasel
Winter flowering heather	Marjoram	Mint
	Honeysuckle	

Make a mini-meadow



Photo: Nic Harrison-White

Grass with a variety of species, textures and associated wildflowers can provide a haven for invertebrates. For example, many species of butterfly are attracted to meadows as sources of nectar, food plants and breeding sites. The

easiest way to create an area of meadow in your garden is to allow a patch of your lawn to grow uncut over the summer months. You may find that a surprising number of wildflowers and grasses appear of their own accord. Alternatively, you can introduce native wildflowers by overseeding or introducing pot-grown plants. Ensure wildflower seeds and plants are of British origin.

Some grasses and wildflowers for a meadow area:

Grasses	Wildflowers	
Smooth meadow	Red clover	Yellow rattle
Rough meadow	Common sorrel	Ribwort plantain
Red fescue	Yarrow	Field scabious
Common bent	Common knapweed	Red campion
Sweet vernal	Ox-eye daisy	Self-heal
Sheep's fescue	Meadow buttercup	Common cat's-ear
Crested dog's-tail	Bird's-foot trefoil	Common sorrel

Don't be too tidy

Try not to be in too much of a hurry to tidy up your garden. Delay cutting back perennials until the spring as the stems and foliage provide shelter for overwintering invertebrates, including beneficial insects such as ladybirds and lacewings. Only tidy up small patches of ground at a time instead of all at once. Tall tussocky grass left at the edge of your lawn and leaf litter may also be used for hibernation, and leaving old plant material during the winter ensures that eggs and larvae are not disturbed. A small patch of nettles in a sunny spot can be a reservoir of beneficial insects and will also support various butterflies and moths. Dead wood is important for a number of invertebrates so create a log pile in a shady corner of the garden. Try to use a mixture of different types of woods (untreated), 15-25cm in diameter and preferably with the bark still on.



Log piles provide important habitats for lots of invertebrates. Photo: Tamara Weeks

Bug homes

There are all sorts of 'bug boxes' available to buy which are designed to provide a winter home for solitary bees, ladybirds, lacewings and other beneficial insects. You can also make simple versions yourself, mostly using recycled household odds and ends. See the 'Homes for Wildlife' information sheet for some ideas.



A 'bug hotel' for overwintering insects
Photo: Tamara Weeks

Compost heaps

Compost heaps are not only a great source of homemade fertiliser, they also make excellent wildlife habitats. Even enclosed bins will attract lots of invertebrates such as woodlice, millipedes and slugs – all essential for breaking down organic and garden waste.

Wildlife ponds

Garden ponds can be a real magnet for wildlife including a wide variety of aquatic invertebrates such as damselfly and dragonfly larvae, caddisfly larvae, pond skaters, water boatmen and pond snails. Pond-dipping allows you get a close-up look



Azure damselfly
Photo: Adrian Davey

at these creatures and can be an excellent educational resource.

Go organic

Don't use pesticides as they are generally non-selective and will kill beneficial insects as well as their food. Slug pellets are also poisonous to birds and other wildlife. Attracting natural predators is the best way to keep a healthy balance in your garden without the need for chemicals. The methods described above will encourage insect predators such as ladybirds and lacewings as well as larger creatures like frogs, toads, birds, bats and hedgehogs, which also feed on slugs, snails and other potential pests.

Spotted a monster caterpillar?



Privet hawk-moth larva
Photo: Tamara Weeks

If you ever encounter a very large and unusual looking caterpillar in your garden, it's likely to be a member of the hawk-moth family. Hawk-moth caterpillars have a curved horn at the tail-end and most British species are green, virtually hairless and often with slanting camouflaging stripes. They can reach huge sizes before going to ground to pupate over the winter. The privet hawk-moth (left) is often found in gardens and is unmistakable, growing to 10cm long, with a vivid green body and purple and white stripes.

See www.cornwallmothgroup.org.uk for more information about moths in Cornwall.

Spiders are very efficient pest predators. Some spin webs which are used as snares. Others lie in wait for their prey or actively hunt.



Photo: Ian French

Here are some methods suggested for wildlife-friendly pest control:

- Make a slug pub! Sink a bowl half full of beer into the ground near to the problem area to attract slugs en-masse, making sure the lip is 2cm above the soil surface to help prevent beneficial ground beetles falling in.
- Surround your flower beds or vegetable patch with strips of sandpaper about two inches in width (use the coarsest available) to make an effective barrier against slugs and snails. For a similar effect on a smaller scale, use a ring of crushed egg shells, sharp gravel, pine needles, coffee, ash or soot is particularly effective.
- The song thrush consumes vast quantities of garden snails. Give them a helping hand by placing a flat stone in the flower border, which they can use as an anvil to smash the shell.
- Some plants may act help by distracting certain species away from your prized vegetables and plants. For example, nettles are a favoured food of snails while nasturtium harbours aphids.
- Plants more resistant to attack or even repellent to some pests can be used as barriers to protect those more vulnerable. These include plants which are strongly aromatic, spiny, red coloured or have tough/hairy leaves. Ones to try include onions, chives, lavender, sage, rosemary, thyme, saxifrage, ice plant, lamb's lettuce and most shrubs.
- To protect young plants from late frosts as well as snails and slugs, remove the cap from a plastic drinks bottle, cut off the bottom using a pair of scissors and place over the plant.
- Do not water plants at night when slugs and snails are most active; water early in the morning instead.
- Go out at night with a torch and remove the slugs from your most vulnerable plants.



Photo: Terry Dunstan

For further information and advice contact:

Wildlife Information Service
Environmental Records Centre for Cornwall
and the Isles of Scilly (ERCCIS)
Five Acres, Allet, Truro, Cornwall TR4 9DJ

Tel: (01872) 240777 ext 250
Email: wis@cornwallwildlifetrust.org.uk
Web: www.ercis.co.uk

Other useful contacts:

- Buglife - The Invertebrate Conservation Trust: www.buglife.org.uk, tel: (01733) 201210
- Butterfly conservation: www.butterfly-conservation.org, tel: (01929) 400209
- Bumblebee Conservation Trust: www.bumblebeeconservation.org.uk

• Flora Locale

(for suppliers of native wildflower seeds)
www.floralocale.org, tel: (01488) 680457

Get involved:

Submit your wildlife records at www.ercis.co.uk/wildlife_recording

Become a member of Cornwall Wildlife Trust at www.cornwallwildlifetrust.org.uk