Scotland's Buzzing

Introduction to pollinators and their habitats

Pollinators (bees, butterflies, moths, wasps, flies and beetles) are found in a wide variety of habitats as the major requirements for all pollinators are fairly simple: nectar-rich flowers to provide a food source for adults and suitable nesting habitat for larvae. Not all pollinators will be found in all habitats, however, as many species have specific requirements which they need to survive. For example, different kinds of pollinators feed on different plants — some may feed on a range of flowers and so will be found across many habitats, while some may only feed on one or a few specific plants, which may only grow in certain conditions.

Pollinators also require a variety of plants and habitats for nesting and laying eggs. Some species lay their eggs on stems and leaves of specific plants or they may make nests in tussocks of grass, underground or holes in walls, trees and dead wood.

Habitats for pollinators must therefore provide resources to meet the requirements of both the larval and adult stages of development.


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Grasslands and meadows

Wildflower-rich grasslands are a vital habitat for pollinators, but sadly over 97% of this habitat has been lost from the UK in the last 100 years. Grasslands and meadows tend to be filled with many different kinds of wildflowers and grasses, which in turn can support a high diversity of pollinator species. The variety of wildflowers in these habitats provide a source of pollen and nectar for many different species, while the grasses provide important areas for sheltering, nesting and hibernating.


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Bumblebees will often nest at the base of dense grassy tussocks and many insects will also hibernate in them over winter. Some insect larvae may even develop in the seed heads of grasses and flowers.

Hay meadows and pastures which are managed for the production of hay, and for cattle and sheep grazing can produce attractive displays of flowers during summer months. These can be very important for insect pollinators as a pollen and nectar source.

Acidic grasslands occur on nutrient-poor, sandy or other free draining acidic soils, often forming part of heathland habitats. They provide nectar and pollen before the heather flowers (e.g. Cat's-ear, Bird's-foot trefoil), in addition to resources later on, e.g. Harebell, Heath bedstraw and Tormentil. These are used by pollinators such as the Tormentil mining bee (*Andrena tarsata*).

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Bare ground

A large number of invertebrates, including many solitary wasps and mining bees, make burrows in sunny patches of bare ground, banks and sandy slopes for rearing their offspring. These insects, in turn, support other species, including 'cuckoo' bees and wasps, oil beetles and bee-flies. These 'cuckoos' or 'cleptoparasites' lay eggs in the host's nests and exploit its resources, often with the larvae of the cuckoo species feeding on the larvae or eggs of the host!

Old sandpits, fire-breaks, quarries and cuttings with sheltered, south-facing slopes provide good sites for these ground-nesting species.


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Woodland, scrub and deadwood

The sheltered nature of woodland, and the presence of dead wood, old trees, leaf litter and dense vegetation makes it a valuable habitat for hibernating adult insects such as queen bumblebees, queen social wasps and certain butterflies and hoverflies. It is also important for overwintering larvae, pupae and eggs of resident species.


© Scott Shanks

Dead wood (dead standing or fallen trees, rot holes, dead branches or old stumps) provides vital habitat for the larvae of many flies and beetles. Dry dead wood in warm, sunny locations is particularly important for aerial nesting wasps and solitary bees.


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Blossoming shrubs and trees, along with brambles, roses, ragwort and taller flowers such as hogweed, thistles and knapweeds tend to establish at woodland edges and in sunny clearings, providing valuable pollinator foraging areas.

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Heathlands

Heathland is a very important invertebrate habitat, supporting many rare British species. The dominant plant species on heathlands are gorse and heathers, which are very attractive to a range of pollinators. Heathland provides an excellent source of pollen and nectar between June and September, attracting vast numbers of insects and their predators.

They tend to comprise of a mosaic of habitats including acid grasslands, shrubs and trees, areas of bare, sandy ground and sometimes wetter areas or open water. Combined, all of these habitats support a huge diversity of pollinating insects at different stages in their life cycles.

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Wetlands

Wetland environments such as ponds, ditches, marshlands and bogs are vital habitats for a wide range of invertebrates, including many pollinator species. Shallow water, wet mud, wet mosses, and semi-submerged woody debris are used by some pollinating flies to breed in, including some species of hoverfly. For example, larvae of the Common dronefly (*Eristalis tenax*) — otherwise called 'rat-tailed maggots' due to their appearance — feed on rotting organic material in stagnant waters. Likewise, the Common bog hoverfly (*Sericomyia silentis*) has aquatic larvae which live in peaty pools and ditches, and the adults are found on wet heaths, moors and in woodland.

Flowering wetland plants such as water mint, spearwort and wild angelica attract vast numbers of pollinators between spring and late summer.

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Urban habitats

Urban areas represent nearly 10% of land in the UK and have a tremendous variety of habitats and other features that can support pollinating insects and other invertebrates, including:

- Gardens, cemeteries, flowery areas associated with school grounds and golf courses
- Flowerbeds, shrubberies, trees in towns and cities
- Brownfield land (including old quarries and spoil heaps)
- Wetland features such as ponds, rivers and streams, for pollinators with aquatic larvae
- Buildings and other structures (e.g. bridges and old walls) with cracks and crevices for aerial-nesting bees, wasps and hibernating insects
- Transport corridors such as roads, railway lines, cycle paths and canals provide a good variety and high local density of flowers, and connect habitats together

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