



Managing Urban Areas For Pollinators

Nearly 10% of the land area in the UK is urbanised. These urban areas often support a diverse range of habitats that are becoming more important for many species of pollinator, especially when managed properly. This guide highlights what habitats in urban areas are important and how they can be better managed to encourage pollinators.

Important habitats of urban areas and their management

Public parks, school grounds and business parks

These locations generally contain extensive formal landscaping with often large expanses of mown grassland, trees, flower beds and shrubberies. The value of these habitats can easily be improved by:

- Ensuring that there is a diversity of plant species present that flower throughout the year, particularly early flowering species.
- Creating different wetland features (e.g. ponds and marshy areas) to provide homes for pollinators with aquatic larvae.
- Allowing fringes of wilder areas of tall herb with Hogweed, Ragwort, thistles and Common nettle and patches of open-structured scrub to develop with brambles, Blackthorn and Gorse to provide forage and nesting habitat for a range of species.
- Transforming an area of regularly cut grass with low species diversity into a wildflower and grassland meadow either by stopping mowing to allow species already present to establish themselves, or through the sowing of native wildflower and grass seed. It is important to establish appropriate management of these meadow areas by ensuring that they are cut at least once a year (preferably in autumn) and that cuttings are lifted and removed from the site. By removing the cuttings this reduces the nutrients which will benefit wildflowers the following year.

Informal greenspace

This includes urban floodplains, heathland, brownfield land, species-rich grasslands and other areas of wild space that are informally used by the public. These habitats are often well used by dog walkers, cyclists and runners and due to their

Habitat for pollinators in urban areas

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

- Public and private gardens
- Churchyards and cemeteries
- Flowery areas associated with school grounds, sports pitches and urban golf courses
- Landscaped business parks
- Municipal parks and patches of formal landscaping with flowers e.g. flowerbeds and shrubberies
- Street trees
- Transport corridors such as roads, railway lines, cycle paths and canals and less formal car parks with some vegetation
- Brownfield land (including old quarries and spoil heaps) and other disturbed or temporary sites
- Watercourses such as rivers and streams
- Ponds, lakes and wetlands
- Buildings and other built structures (e.g. bridges and old walls) with potential for pollinator friendly features
- Encapsulated semi-natural habitat such as remnant floodplain grassland, scrub, woodland, wetland or heathland
- Small nature reserves and other areas of created habitats

wilder states can be incredibly important for pollinators and other wildlife. These habitats can act as corridors and stepping stones interacting strongly with other habitats including gardens, formal greenspace, transport corridors and urban woods allowing the movement and mixing of individuals and species across an area.

It is important that these habitats are recognised and appropriately managed and preserved for the wildlife they support. Management that may be required could include cutting and lifting of grasslands, cutting back of scrub and woodland, bramble control and deliberate disturbance to ensure early successional stages are not lost (especially on brownfield land). Additional habitat can be created at these sites to provide further benefits such as creating pools, rubble piles, dead wood, bee banks and bee hotels. Avoid tree planting on sites that have established value for pollinators and other wildlife and do not introduce wildflower seed mixes unless there is a clear benefit, because you could damage a site that already has value.

Urban transport corridors

These include habitat found alongside roads, motorways, railway lines, canals, cycle paths and alleyways. Often, transport corridors allow for the movement and mixing of species through an urban area. Some transport corridors are substantial enough to support swathes of semi-natural habitat whilst others are too narrow. Narrow features can still be

enhanced for pollinators by planting shrubs as well as Ivy and other climbers to grow up walls and fences. For more information, see the Transport Corridors for Pollinators sheet.

Urban woods and trees

In urban areas, woodland varies considerably in size and plant species from high quality remnants of ancient woodland (often found in designated nature reserves) to highly disturbed sites with little ground flora. Urban woods generally experience far more recreational pressure than rural ones and are more likely to have invasive species issues such as Rhododendron.

Woodlands should be appropriately surveyed and managed for the wildlife present. It may be that the woodland needs to be coppiced to create open clearings to create flowery margins, or that planting of native species will help introduce a diverse flower rich understory, or the creation and management of dead wood.

As well as having woodland, there may be areas across an urban area with individual or scattered trees, e.g. along a road verge or within an area of amenity grassland. Popular species of tree with blossom include cherries, hawthorns, rowans, horse chestnuts, limes, False acacia and maples, a diversity within a site can provide a blossom sequence from March until July. Older trees, blossoming or otherwise, may support features suitable for the larvae of saproxylic hoverflies such as



Images clockwise from top left: A flowery verge by a busy road; ancient woodland with native Bluebells in bloom; allotments often support a range of niche habitats; relaxed mowing at a cemetery has created a very flower rich area.



Images: On left, an orchard where the grass has been left to grow allowing flowers to develop; On right, a biodiverse green roof with bare ground and dead wood pile.

water-filled rot holes, decaying roots, sap runs and heart rot, though health and safety considerations tend to win over ecological ones once decay progresses too far. However, it is possible to find veteran trees within the urban landscape e.g. the famous Preston Park twins of Brighton (the oldest English elms in Britain). For more information, see the Woodland for Pollinators sheet.

Churchyards and cemeteries

Old churchyards and cemeteries can support important species-rich grassland that has been spared from agricultural improvement. These grasslands can be managed as traditional hay meadows, but cutting should be as late as possible (in

autumn) to allow flowering and setting seed by all the plants present. Churchyards and cemeteries also often contain valuable mature or veteran trees and blossoming shrubs. Many churchyards are over managed so that they contain few flowers. Relaxing a mowing regime can often result in the natural formation of flowery grassland, though conversely, some short-cropped churchyard lawns can support very large mining bee nesting aggregations.

A more relaxed approach to mowing can turn a cemetery or churchyard into a haven for pollinators.

Allotments and orchards

Allotments can be some of the most flowery features of an

Solitary bees

There are about 250 species of solitary bee in the UK and they are our most efficient group of pollinator. Different species of solitary bee make their nests either in bare ground (often on banks) or in holes in wood or in walls. To help ground nesting solitary bees, consider creating a scrape or bee bank on a well-drained area, bare or sparsely-vegetated ground and/or on a south-facing slope. For hole nesting solitary bees you can design and make your own bee hotel using a variety of materials such as wood with different sized holes drilled into it and/or bamboo canes; make sure that the bee hotel is situated in a warm and sheltered spot. Planting wildflowers alongside your bee homes provides important forage for adult bees stocking their nests with pollen to allow the successful development of their larvae. The Red mason bee (*Osmia bicornis*) is the most consistent user of bee hotels using holes in wood and bamboo (see image below) although other invertebrates will also use them including spiders, ants and wasps and basking damselflies and butterflies.



Images from left to right: bee hotels come in many shapes and sized; Red mason bee nesting in bamboo in a bee hotel; A bee bank with sparse vegetation.

urban environment, and allotment holders often place as much emphasis on producing flowery plots as growing produce. Urban orchards are a rich source of spring blossom (from the orchard trees) but may not feature flowery grassland below the trees. If that is the case, try relaxing mowing, or use a wildflower seed mix to enhance conditions. These are ideal locations for the creation and installation of bee hotels and bee banks.

Built structures

The potential value of buildings, bridges and walls for pollinators is usually under-estimated. Nature will often make them valuable without any assistance. For example a wall with ivy that is in flower in late autumn is important for a number of moth and wasp species. Ivy-leaved toadflax, Yellow corydalis, Oxford ragwort and Red valerian often grace old walls and provide important forage for pollinators and homes for other invertebrates.

It is possible to enhance built structures such as roofs and walls through the installation of green infrastructure such as living green roofs, roof gardens and living walls. The potential surface area for this in towns and cities is considerable and provides opportunities for pollinators to move through an urban landscape using built green infrastructure as stepping stones. Additionally features such as bee hotels, bee banks, ponds and dead wood can be incorporated into green infrastructure.

For more information, see Buglife's Creating Green Roof for Invertebrates, a best practice guide available on our website.

How do pollinators use urban areas?

Pollinating insects require a highly varied landscape that provides both foraging and nesting habitats to allow them to successfully complete their lifecycle. Urban landscapes often provide these vital habitats in a number of ways.

Flower foraging

A variety of species of trees, shrubs and herbaceous plants are typically found in urban areas that are often planted at high densities and provide flowers through all months of the year. Planted areas often include mixes of native and long-naturalised species alongside casuals and fully cultivated species. The proportion of native versus non-native flowers will vary according to the type of urban green space and its local history. The proportion of native plants tends to be highest in more natural areas such as enclosed floodplain grassland and older woodland and lowest in formal settings such as municipal parks and school grounds. Whilst it is good to encourage native flora where possible, pollinators can use many exotic, non-native flowers as avidly as native ones, and

such non-native flowers can help to extend the foraging season from autumn through to early spring.

Urban areas are typically associated with a warmer microclimate. This allows pollinators to exploit warm winter days more successfully in urban areas than is possible in the wider countryside, and this can even benefit the surrounding

Rare pollinators

Rare and threatened pollinators can occasionally be found in urban areas, sometimes as visitors but occasionally as breeding residents. If the latter, it is especially important to identify the management requirements of that species (e.g. protection of a specific site or a habitat category such as old trees) and account for these in management decisions and maintenance contracts.

Information on rare and scarce species varies in how readily accessible it is, e.g. Butterfly Conservation has lots of information on butterflies and moths although that on bees, hoverflies or beetles is less easily sourced. If you have a rare pollinator at a site you manage and would like advice, contact Buglife. If the site concerned is a Site of Special Scientific Interest, you should also contact the relevant statutory organisation (e.g. Natural England, Natural Resources Wales, Scottish Natural Heritage and Department of the Environment for Northern Ireland).



Images of some scarcer pollinators known to occur in urban areas, clockwise from top left: The hoverfly *Mallota cimbiciformis* which requires rot holes in old trees; Red-shanked carder bee (*Bombus ruderarius*); Brown-banded carder bee (*Bombus humilis*); Tormentil mining bee (*Andrena tarsata*) which requires south facing bare ground for nesting.

countryside e.g. allowing greater activity by queen bumblebees in early spring. Several species of pollinator, including bumblebees, Honey bees (*Apis mellifera*) and certain flies have been recorded foraging throughout the winter season especially on mild winter days.

Larval development

Different species of pollinator have particular habitat requirements to complete their lifecycles. The diversity of habitats within urban areas allows many species to do this:

- Lakes, pools, ponds, puddles, drains, ditches and watercourses for pollinators with aquatic larvae.
- Prey and hosts for the many predatory and parasitic pollinators, e.g. hoverflies with larvae that eat aphids or develop in bee nests and flies and wasps with larvae that develop inside other invertebrates.
- Dead wood and mature trees for hoverflies and beetles with 'saproxylic' larvae and aerial-nesting solitary bees including mason bees and leafcutter bees.
- Sunny slopes, banks and areas of bare dry ground (e.g. flower beds) for ground-nesting mining bees and their parasites (e.g. bee-flies and nomad bees).
- Old rodent burrows for nesting bumblebees.
- Specific food plants for herbivorous larvae of a range of pollinating insects such as butterflies and moths.
- Dung for a range of flower-visiting flies e.g. dungflies, anthomyiids and muscids.
- Carrion for blowflies, including blue bottles.

Overwintering

Any dense vegetation (e.g. tussocky grassland), bramble clumps, dense scrub, compost heaps, derelict structures, rubble piles, log piles and debris within an urban environment can provide a feature for hibernating adult insects such as queen bumblebees, queen social wasps and certain butterflies and hoverflies; as well as overwintering larvae, pupae and eggs of many species. Hibernating sites can help increase the abundance of many of our pollinators.

Seasonality

Urban habitats often experience strong seasonality and this is especially evident in the range of flowers present over the year and the pollinators that these flowers attract. The following tries to capture the general sequence of flowers present in an urban environment during a typical year.

Spring

The timing of spring in urban areas is slightly in advance than the wider countryside due to its warmer microclimate. The first flowers in March are very important for pollinators emerging from hibernation such as queen bumblebees, *Andrena* mining bees and hoverflies like the Marmalade hoverfly (*Episyrphus balteatus*). Plants in flower in March include Cherry plum, early-flowering heathers, crocuses, hellebores, Goat willow, Common gorse, Coltsfoot and Red dead-nettle.

The peak month of activity of queen bumblebees and solitary mining bee across most parts of Britain is in April and the abundance and diversity of many other pollinators such as hoverflies and some butterflies including Peacock (*Aglais io*) and Small tortoiseshell (*Aglais urticae*) rapidly increases during this month. The blossom of flowering shrubs and trees such as cherries, plums, apples, willows, currants and maples serve a wide variety of pollinating insect species. Other plants in flower in April include dandelion and daisy that are abundant on lawns (the value of these should not be underestimated) as well as White dead-nettle, Green alkanet, violets and Oxford ragwort in more wilder urban areas. Successful foraging in April can help dictate the number of pollinators that you see later in the year including the numbers of worker bumblebees.

During the end of spring, day length and average mean temperatures start to increase. May is one of the best months for pollinator abundance and diversity, with various sorts of beetles (e.g. malachite beetles, longhorn beetles and soldier beetles) now joining the ranks of flies and bees. Formal



Pollinating insects active in spring include (from left to right) Tawny mining bee (*Andrena fulva*), the Dronefly hoverfly (*Eristalis tenax*), and Dark-edged bee-fly (*Bombylius major*).

greenspace produces an ever-increasing variety of flowering herbs and shrubs, including bedding plants and hanging baskets. Blossom from trees in late spring is provided by horse chestnuts, hawthorns, cotoneasters and laburnums. In wilder areas, a range of plants are in flower including Broom, Cow parsley, Red campion, Common wintercress, speedwells, cranesbills and native Bluebell.

Summer

Summer pollinators include a plethora of bees, wasps, flies, butterflies, moths and beetles. These will include the progeny of pollinators that were flying in spring e.g. worker bumblebees and the second generations of certain hoverflies and butterflies, but also summer-specific pollinators such as leafcutter bees and the Wool carder bee (*Anthidium manicatum*).

There are many types of native, naturalised and cultivated plants in flower over the summer months. Blossoming trees often include limes, Sweet chestnut and False acacia. Within more natural settings, plants such as Hogweed, thistles, knapweeds, Field scabious, ragworts and brambles are particularly important. Buddleia can be present in both formal and more natural settings such as brownfield sites and although attractive to some pollinators (notably bumblebees and butterflies) it can be highly invasive.

Autumn

The diversity of flowers and pollinating insects generally decreases during the autumn, although in urban areas it is often sustained slightly later. Late-flowering plants provide the final meals for those insects that over winter as adults including queen bees, and some butterflies. Flowers present in autumn include cultivated species such as Michaelmas daisies,

Long tongued pollinators

There are several species of pollinating insect with long tongues, including bumblebees, moths and butterflies that are only able to forage at flowers of certain plant species. For example, Garden bumblebees (*Bombus hortorum*) have the longest tongue of any bee in the UK and typically forage at long flowered plants such as Foxglove, Red clover and Viper's bugloss.



Garden bumblebee feeding on Red clover.

Ice plant and Canadian goldenrod as well as Ivy and Devil's-bit scabious that are particularly important for pollinating insects.

Winter

Urban areas generally support a small number of blossoms and flowers over the winter months and these can be exploited by pollinators on mild winter days. These can include Fly honeysuckle, Oregon-grape, Winter cherry, winter-flowering heathers, cyclamens, Polyanthus and early snowdrops. Native or naturalised 'weeds' that can flower over winter include Red dead-nettle, dandelion and groundsel.

Further reading

- Buglife. Living Roofs web pages: <https://www.buglife.org.uk/campaigns-and-our-work/habitat-projects/living-roofs>
- DEFRA 2014. Bees needs: [Pollinator advisory sheets: http://www.wildlifetrusts.org/bees-needs/information-sheets](http://www.wildlifetrusts.org/bees-needs/information-sheets)
- Kirby, P. 1992. *Habitat Management for Invertebrates: a practical handbook*. RSPB.
- Baldock, K. et. al. 2015 *Managing urban areas for insect pollinators*. Living With Environmental Change Policy and Practice Notes No.20 (Insect Pollinators Initiative).
- Gunnell, K., Murphy, B. & Williams, C. *Designing for Biodiversity: A Technical Guide for New and Existing Buildings* (2nd edition). RIBA Publishing.
- RHS Perfect for pollinators web site: <https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators>

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