



Managing Transport Corridors For Pollinators

Transport corridors, including roads, railways, canals and cycle paths provide a range of habitats and features that are beneficial for pollinators. The UK's transport 'soft estate' extends to millions of hectares of land and is used by hundreds of pollinator species. This guide highlights why transport corridors are important for pollinators and how they can be managed to provide additional benefits.

The important habitats of transport corridors and their management

Grassland and tall herb habitats found in transport corridors include more natural grasslands, naturally regenerated habitats and artificially seeded areas. They can be both highly flowery and virtually flowerless (for example gang-mown or coarse, rank grassland). The best verges for pollinators are those with a broad swathe of abundant and diverse flowering plants.

- Grasslands on less fertile soils can be incredibly flower-rich, with species such as bird's-foot trefoils, Cowslip, Oxeye daisy, bedstraws and orchids.
- On more fertile soils, the diversity of flowers is usually lower and the vegetation lusher, providing less food for pollinators and less habitat for ground-nesting bees and other insects.
- Tall grown verges with an abundance of White dead-nettle, Cow Parsley, Hogweed, comfrees, thistles or willowherbs can attract large numbers of pollinators.

In some urban areas, artificially-seeded 'pictorial' roadside meadows provide food for many pollinators and make local environments more attractive for people. Care is needed when siting these meadows to avoid destroying or damaging other wildlife habitats.



Sensitive verge cutting

Managing grasslands for pollinators

Cutting regimes should aim to find a balance between safety, amenity and the needs of pollinators/wildlife.

Along wider road verges and towpaths, it is usually possible to employ differential cutting regimes. Three cutting zones are recommended.

1. The strip immediately beside a road or footpath, or the critical sight-lines needed at junctions can be cut frequently for safety reasons.
2. Other areas should be cut less frequently (perhaps once per year) to allow plants to flower.
3. Some areas should be left uncut on cycles of several years to allow tall herbs, scrub and bramble to grow and diversify the vegetation structure.

It is important to remove arisings from wildflower-rich grasslands to prevent soil enrichment, which favours coarse and competitive plants. This also keeps patches of bare ground accessible to ground-nesting bees.

Try and avoid cutting verges during peak flowering periods, for example late May when Cow Parsley and buttercups are flowering, or July when thistles, knapweeds and ragworts are in bloom. Cutting some lower quality verges early in the season (May or June) can be beneficial as it can delay flowering into early autumn, however any cutting before September will impact on pollen and nectar supplies for pollinators.

Herbicides should be used carefully, either targeting areas immediately beside a railway track or road or by spot treating problem plants or patches.

Hedges provide flowers, shelter from wind, food plants for pollinator larvae and overwintering sites in the hedge bottoms. Mature trees such as cherries, maples, limes and Horse chestnut also provide blossom.

- Avoid cutting large lengths of hedge in one go.
- Cut hedges on a 3 year (or more) rotation. Blossom is often limited in the first few years after trimming.
- Let some hedges thicken into a managed scrub belt. Blackthorn will readily do this through suckering.
- If creating new hedges, select species which are most appropriate to your area, and use a combination of species to provide a long blossoming sequence.

Scrub and woodland is a common feature in railway corridors and motorway verges. Scrub is a major source of blossom, shelter and shade. If unmanaged, it can encroach on other valuable habitats such as grassland and bare ground reducing the resources available for pollinators. Use a 10-year cutting rotation and try to ensure that a variety of scrub species blossom each year.

Larger trees and shrubs are particularly a feature of urban streets. They can include a mix of native and exotic species. Blossoming shrubs in sheltered, sunny locations can attract huge numbers of pollinators.

- Trees of the Rose family (Rosaceae) such as thorns, rowans, apples (crabs), pears and amelanchiers provide large quantities of pollen and nectar.
- Avoid plants with double flowers as these can be useless for pollinators.
- Woody legumes such as False acacia and laburnums are much loved by bees.

Britain has some internationally important veteran trees growing along road verges and train lines. These trees support some of our rarest pollinators including rare hoverflies. Every effort should be made to retain them and find innovative ways to minimise safety risks for example by propping and careful crown management.

Built structures, stations etc.

Walls and bridges can support native flowering climbers such as Ivy and Honeysuckle. Old brickwork and stonework also has its own flowery habitat with Oxford ragwort, Red valerian, Ivy-leaved toadflax and Elder. These plants provide valuable sources of pollen and nectar, so if it is not necessary to clear such vegetation then leave it for pollinators to use.

Railway stations, service stations and canal-side developments can be ideal for creating attractive pollinator-friendly features including flowery green roofs, flower beds, blossom-producing shrubberies and window gardens. Bee hotels, bee banks and log piles can easily be incorporated to provide nesting sites for aerial-nesting bees. Ponds also provide useful habitat.

Wet features such as canals and balancing pools with marginal swamp, along with ditches support wetland flowers such as Marsh marigold, Marsh woundwort, Meadowsweet and Great willowherb, all of which are good sources of pollen and nectar. It is relatively easy to integrate wildlife-friendly drainage features into new road schemes. Those designed to reduce pollution run-off provide good habitat for aquatic hoverfly larvae (many of which are fairly pollution-tolerant).



Marginal swamp vegetation



Tall herb vegetation fringing ditches

Embankments, cuttings and slopes often provide good habitat for pollinators. The steepness of the land means these areas are less frequently mown and not formally landscaped.

- South-facing slopes that are not shaded often have drier and more sparsely-vegetated soils and can be very warm. They will support a number of bees and butterflies that struggle in the cooler and damper conditions of a north-facing slope.
- In prolonged heat waves and drought summers, south-facing slopes can lose most of their flowers by late summer, so north facing slopes become more important for pollinators.
- Where scrub is being managed within a cutting, it makes sense to keep less on south-facing slopes, but allow more on a north-facing slope where it can help produce sheltered and humid conditions.

Invasive plants, shrubs and trees

Transport corridors are particularly prone to colonisation by invasive non-native plant, shrub and tree species. Some of these plants are now well naturalised and act as very valuable food sources for pollinators.

Some non-native plants including Japanese Knotweed, Buddleia, Russian-vine, Winter heliotrope and Rhododendron along with native species such as Blackthorn, birches, brambles, Cow Parsley, Hemlock and Stinging nettle can become over-dominant and out-compete other important flowers that pollinators need.

Invasive plants are now so widespread along transport corridors, that it is sensible to prioritise action with a focus on sites where important habitats or rare pollinator species are present.



Creating new pollinator-friendly corridors

New or expanded transport links provide significant opportunities for creating pollinator-friendly habitats. When creating new grasslands it is best to avoid using topsoil as its high fertility will help competitive plants dominate to the detriment of wildflowers.

In chalk, limestone or sandy areas (especially where bedrocks or infertile subsoil are exposed), sites should be allowed to regenerate naturally from the local seed bank without applications of seed. Some of the most wildlife-rich road verges have developed in this way.

Ensure any seed used is of UK provenance, and ideally try to source local provenance seed or green hay. The composition of the seed mix should be tailored to the soil type and location. Yellow-rattle seed can help reduce grass growth and aid wildflowers establishment.

If a surplus of low fertility spoil is available consider using it to cap any fertile soils or other patches of ground and then allow natural regeneration to take place. This can be a cheap and easy way of creating new areas of pollinator-friendly grassland.

How do Pollinators use Transport Corridors?

Food - transport corridors can provide a good variety and density of flowers between spring and autumn, supplying food (nectar and pollen) for many pollinators. These flowers are used not only by pollinators breeding within the corridor but will attract others from some distance away. Spring-blossoming shrubs such as willows, Blackthorn and Hawthorn, plus thistles, ragworts and members of the carrot family (for example Cow Parsley and Hogweed) can substantially increase the abundance of pollinators.

Breeding - transport corridors can provide the breeding and nesting habitats required by a wide range of pollinators. Old burrows and dense vegetation provide nesting sites for bumblebees, while sunny slopes and bare dry ground are used by ground-nesting bees such as mining bees, their bee-fly parasites and nomad bee cuckoos. Hoverfly and other pollinator larvae use ditches, drains, balancing pools and canal-side swamp as well as mature trees and deadwood. A range of plants provide food for pollinator larvae, including moth caterpillars.



Overwintering - dense vegetation such as tussocky grassland, scrub, buildings and debris can provide essential habitat for hibernating pollinators. Many species overwinter as adults including queen bumblebees and some butterflies and hoverflies, while others overwinter as larvae, pupae or eggs.

Wildlife corridors - transport corridors have an important role to play in helping to connect fragmented remnants of other habitats such as species-rich grassland, heathland and woodland. These corridors help pollinators to move around the landscape and makes their populations more resilient to threats such as climate change and loss of habitats.

Seasonality of flowering

Transport corridors exhibit strong seasonality in the food resources they have available to pollinators. The variety and combination of flower resources has a major impact on the range of pollinators occurring on a site.

Spring - spring-blossoming shrubs and trees are vital for early pollinators including queen bumblebees and wasps, butterflies and moths. Both wild and planted species can be important. Cherry-plum, Goat willow and Common gorse start blossoming in March, with Blackthorn, Plum, Wild cherry and larger willows peaking in April. Hawthorn is at its flowering peak in May, followed by Dogwood, Guelder-rose and bramble flowering into June.

Spring flowers such as Snowdrop and crocuses appear in February, which is early for many pollinators. However by April violets, Primrose, Cowslip, dandelions and dead-nettles are key food sources, followed by buttercups, Cow parsley, Garlic mustard and comfreys.

Summer - wildflowers such as the thistle-daisy-dandelion family (Asteraceae), the carrot family (Apiaceae) and the legume family (Fabaceae) are key food sources for pollinators during the summer months. In June and July Hogweed and thistles can be very important. Woody species such as Elder, limes, brambles, Dogwood and roses are also well used by pollinators.

Autumn - Flowering generally tails off after August, but plants such as Devil's-bit scabious, thistles, Autumn hawkbit, ragworts, Bristly oxtongue, Yarrow and heathers carry on flowering into the autumn. Ivy is one of the most important autumn flowers attracting huge numbers of butterflies, bees and flies.



Examples of pollinator-friendly summer transport corridors. An Oxeye-daisy-dominated road verge (top left), Hogweed-dominated road verge (top right), Common ragwort and Spear thistle on a verge (bottom left) and a railway line with Wild carrot and Common Ragwort growing on ballast (bottom right).



Transport corridors are important sources of spring blossoms and feature a blossom sequence that can start with Cherry-plum and Goat willow (top left and right) progressing through Blackthorn to Hawthorn (middle left and right). These are important for butterflies like the Small tortoiseshell, queen bumblebees and many sorts of hoverfly (bottom row left to right).

Rare and scarce pollinators may occasionally be found in transport corridors sometimes as visitors, but also as breeding residents. Where these species are known to breed it is important to identify any particular needs such as food plant or nesting sites and incorporate these in management decisions. Some rare pollinators known to occur along transport corridors include:

Butterflies: Adonis blue, Brown hairstreak, Chalkhill blue, Dingy skipper, Duke of Burgundy, Grizzled skipper, Marsh fritillary, Northern brown argus, Silver-spotted skipper, Silver-studded blue, Small Blue

Bees: Big-headed mining bee (*Andrena bucephala*), Large scabious mining bee (*Andrena hattorfiana*), Great yellow bumblebee (*Bombus distinguendus*), Brown-banded carder bee (*Bombus humilis*), Large Garden bumblebee (*Bombus hortorum*), Red-shanked carder bee (*Bombus ruderarius*), Shrill carder bee (*Bombus sylvarum*).

Flies: *Pocota personata* (on veteran trees), *Stratiomys longicornis* and *Hybomitra rustica* (in coastal ditches).

Further reading

- DEFRA 2014. Transport Corridor – tailored advice on managing land for pollinators: http://www.wildlifetrusts.org/sites/default/files/6192_defra_info_sheet_transport_corridors_final.pdf
- Plantlife 2015. Road verges and wildlife management guidelines: http://www.plantlife.org.uk/uploads/documents/Road_Verge_Campaign_full_guidelines_2015.pdf
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- Buglife. Living Roofs web pages: <https://www.buglife.org.uk/campaigns-and-our-work/habitat-projects/living-roofs>
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