COMMUNITY POLLINATOR TOOLKIT

2025

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Acknowledgements: Produced by Emma Lansdell, Hannah Simmons and Simon Springate.

Image Credits: Rosie Bleet, Bex Cartwright, Tony Child, Steve Darling, Nikki Gammans, Tilly Hopkins, Emma Lansdell, Hannah Simmons, Simon Springate, Tenterden Wildlife.

Contact details: planbee@kent.gov.uk

TOOLKIT OVERVIEW

Kent's Plan Bee has two broad objectives. The first is to embed the conservation of pollinators into the work of Kent County Council wherever possible. The second is to help the wider community to understand the importance of these insects and to do what they can to reverse their declines.

This toolkit is part of that second objective. It is intended to show parishes and community groups of all sizes the kind of actions they can take on the local scale in areas they manage or work in. There is no one-size-fits-all prescription to help pollinators. Each location is different in its physical characteristics, history, needs and uses. The interests of the community and the available resources will also be different.

It is our hope that, together with the actions taken by national, county, borough and district levels of government, local and national charities and businesses, we will be able to create a network of habitats for pollinators across the county, joining up isolated populations and helping them survive into the future.

INTRODUCTION

Why help Kent's Pollinators

Pollinators are essential to our environment, our food production, and our lives. They carry pollen grains from flower to flower, enabling fertilisation for seeds, nuts and fruit to be produced. Without insect pollination, most wild and cultivated plants, from trees to strawberries, could not reproduce. Losing our pollinators would be a major ecological and economic disaster.

The conservation group Buglife says that every third mouthful of our food depends on insect pollinators. They are central to Kent's fruit farms, representing 40% of the county's agriculture, but they also serve field crops like oil seed rape and field beans as well as clovers and other nitrogen fixing plants, important for livestock grazing.

But it's not just our food that needs pollinators. Three quarters of our native trees, shrubs and herbaceous plants rely on them for their reproduction. They add to the diversity of plant species, habitats, and wildlife in Kent as well as its natural beauty, making Kent a better place to live, to enjoy and to visit.

Kent is home to approximately 80% of British bee and moth species, 70% of butterflies, 60% of flies, and more than 65% of beetles. While many of these, even if largely unnoticed by the human population, are common and widespread, a number are rare and threatened nationally.

Kent's Plan Bee is Kent County Council's pollinator action plan, designed to:

- Ensure that pollinators' needs are always considered throughout Kent County Council's work and services
- Make the county council a community leader in action for pollinators,
- Take the lead in mobilising the people of Kent to improve the habitat and the food sources of these insects

Kent County Council's contribution can only go so far. That is why we have designed this toolkit to encourage Parishes and local community groups to adopt some simple actions that benefit pollinators on the land they manage, whatever its extent. With all these areas working together to improve the county for pollinators, these small actions will join up and create a connected corridor of plenty for pollinators, ensuring their survival for generations to come.

What it will involve

Before you get started, you will want to read this document, find out what you already have by conducting some simple surveys, and make some decisions on what your plan will be going forward. Then it's time to deliver your actions through making changes and working with your local community! Don't forget to plan some monitoring of your pollinator populations each summer to see how your actions are improving your targeted space for biodiversity.

Is this the right action plan guidance for you?

This toolkit is aimed primarily at at Parishes and local community environment groups, such as "Friends of" groups. It is likely that you will have some responsibility for an area of green space, which you have control of, can input into how it is managed or that you can add in new features to help support pollinators.

- A few things to consider before you get going:
- Have a good look through the toolkit – this will give you a better idea of what's involved and help you decide if you have the capacity to take on these actions and surveys.

Delivering actions for pollinators will need to be a community effort, so make sure you've talked to your local community, council, or any other authority who should be aware of your plans, and get their support.

For District, Borough, and Town councils, we have a more comprehensive Pollinator Action Plan Blueprint, designed to help you create and establish your own local Pollinator Action Plan.

Simple examples of actions

Actions don't need to be big or complicated; most often, low impact and low-cost changes to local green space management can make a big difference, such as reduced grass mowing or encouraging local wildlife gardening. And don't feel confined by the suggestions in this toolkit, if you feel you can achieve other actions for pollinators then add those to your list. You may already be taking positive actions, either deliberately or coincidentally, so don't forget those.

Letting us know

Kent's Plan Bee would like to know who is taking part. We will be happy to help where we can but are only a small team so sadly cannot visit every Parish or site. Once you have done your surveys and chosen your actions, drop us an email letting us know who you are and what you are or will be doing. This information will be used to build a picture of actions taking place across county and hopefully a wonderful, connected map will begin to emerge.

Don't stop there though, we are always happy to hear from you, especially when you have finished an action. We would love to mention these in our newsletter and on our social media channels to help inspire others to take up the challenge and show how simple it is to carry out some of these actions.

We hope to produce a live map on our website pages to show where actions are taking place in Kent. You can also add your sites to Buglife's B-Lines map on their website

DECIDING WHAT YOU CAN DO

What do pollinators need?

Pollinators are diverse and therefore have a variety of different needs throughout the different stages of their lifecycles. Not all of these needs can always be provided on one site but need to be available in a landscape for a species to survive.

Sustenance – Food & Water

Most pollinators visit flowers for the sugary nectar they produce. This high energy food is vital if the pollinator is to remain active from hour-to-hour and to ultimately complete its life cycle. The sustenance gained not only maintains the pollinator but is often stored away to feed future offspring. Nectar producing plants come in all shapes and sizes, from large trees and bushes to tiny flowering plants hidden among the grass.

Not all pollinators are fuelled only by nectar, some feed on the flower's pollen and collect it to feed their young. They often become accidental pollinators as when collecting pollen to eat, they end up getting some on their bodies which they transfer from flower to flower as they continue to collect it.

Many pollinators are generalists and will seek nectar or pollen from a range of plants, while others are very specialised and only feed from specific flowers at certain times of year. Similarly, some flowers can be pollinated by many kinds of insects, whereas some plants have developed a mutual relationship with one or two pollinator species. So a pollinator-friendly area needs a range of flower types present throughout the year to maximise its insect diversity. And a range of pollinators is best for wildflowers.

Garden plants and crops can be very useful for pollinators, especially in winter and spring, but be aware that many cultivated varieties have lower pollen and nectar value than wild species for the adults and that larvae may only be able to use native species for food. There are several research and labelling schemes that can help with selection of cultivated plants, such as the RHS Plants for Pollinators program.

And this is just the adult stage; there is also the larvae to consider. Many butterfly and moth caterpillars need to consume the green parts of certain food plants to grow and develop into their adult forms. The larvae of some beetles only eat dead and decaying wood, with development potentially taking several years.

Many pollinator species also require a water source, as not all of their fluid needs can be met through feeding, so ponds, puddles and water features can be an important resource to think about.

Nesting and Shelter

Pollinators need nesting opportunities and shelter for a number of reasons including reproduction, hibernation and temporary refuge from weather conditions. The same species may have different requirements at different times of year.

For a pollinator to complete its life cycle, it is very important that its breeding conditions are met. Males may need to establish a territory of a particular size or with specific structures or environmental characteristics to successfully mate. Dead wood, holes or cracks in trees, hollow plant stems and areas of bare ground are important habitats for solitary bees and wasps to nest in, as well as some flies and beetles.

Bumblebees may prefer tussocky areas of grass or the abandoned burrows of mice and voles. The larvae of some pollinating flies live underwater in ponds, ditches and streams or in dung. Some blue butterflies' larvae can only complete their development in ants' nests, so the needs of more than one insect species become important. Some of these elements can be replicated by artificial structures like bee or bug hotels but ensuring that there are a variety of habitat types and structures is the best way to help. Nearly half of our native bee species nest in soil or underground, whereas less than 15% use holes in wood or stone.

The same principles apply to some pollinators' requirements for shelter and hibernation. During the winter months, stable shelter for pollinators is vital. Hibernation sites are often cool and north-facing to prevent emerging too early and could include banks or ditches, woodlands, hedgerows, leaf litter, seed heads or denser areas of vegetation like ivy or grass tussocks.

FINDING OUT WHAT YOU HAVE

Before you start thinking about how you may be able to help pollinators, you'll need to complete a basic habitat survey. This is a chance to have a look around your green spaces and note the habitats and features.

How to complete a habitat survey

- Print off a map or create a digital version
- Mark on the map where the different sites are that you manage and maybe take photos to illustrate what you are describing to others.

WHY MONITOR PLANTS, POLLINATORS AND HABITATS?

- To see what you've already got
- Identify suitable areas for works to take place – right action, right place
- Suitable for the landscape - no point in creating a pollinator feature if pollinators are unable to get to it in the first place.
- Determine the effect of your actions and inform any changes to your plans.
- Provide evidence to other organisations including potential funding bodies

For Parishes and larger sites, you could identify the different habitats	
• Woodlands	• Horticulture
• Hedgerows	• Orchards
• Grasslands	• Wetland (standing or running water)
• Brownfield	• Coastal
• Scrub	• Health
• Gardens	• Inland rock

On smaller sites or if you wish to go into greater detail, record the features that are present

- **Flowering hedges –** hedgerows provide shelter and flowers.
- **Flower rich habitat & borders –** if diverse, these can provide food throughout the year.
- **Long grass –** provides nesting and hibernating opportunities.
- **Exposed soil & patchy grass –** great for solitary bees and wasps
- **"Scruffy" verges –** if cut less often, these can be valuable sources of nectar and pollen.
- **Natural ponds -** many species need water and use ponds for breeding.
- **Bramble patches -** provide nectar and pollen for many species and nests for some.
- **Sunny banks -** exposed soil in banks provides a warm, sheltered nesting site for many species.
- **Old walls –** loose mortar or drill holes can be used for solitary bee nesting.
- **Deadwood in the sun or shade -** an important nesting and hibernating place.
- **Structures in trees (e.g. nest or rot holes, sap runs) -** mature trees can provide nesting sites.
- **Composting material/rotten vegetation -** breeding sites for many hoverflies and soldier flies.

- Consider which parts of the site are sunny/shady or exposed/sheltered for later when coming up with plans
- Consider what is immediately surrounding your site. Does it include or border important habitats or designated sites such as ancient woodland or Sites of Special Scientific Interest (SSSI)? This may impact which flowers you can introduce safely and the types of works you can do
- Look a little further out and see what other habitats are close by - can you use your area and actions to connect these habitats or create a corridor between them?

Establishing a Baseline

What information do you or others already have? You could check with local charities, councils or Kent and Medway Biological Records Centre.

Remember that you can take this as far as you want; if you were interested in biodiversity on your site, you could just make a list of the species that you manage to spot through the year or you could carry out a structured survey. Plant surveys can be carried out outside of Spring/Summer, but it can make it more difficult to identify some flowering plants.

The important thing for any information to be useful both now and in the future is to include the 4Ws –

WHO spotted something

WHAT is it (and who decided what it was)

WHERE was it e.g. grid reference, post code

WHEN was it observed

Plant Survey

As well as being vitally important to pollinators, plant diversity has value in itself, as well as supporting many other sorts of animals and fungi. You don't need to find or identify every species on a site; you might find that a particular sort of flower type is missing and take action to add to the diversity of plants and thereby pollinators. There are ways to do simple surveys every year that allow you to compare different sites or the same site in different years and we have included an example in the appendices. The Natural History Museum provides a downloadable catalogue of resources, though some links are out of date.

Monitoring your pollinators

DON'T FORGET - MONITORING IS TAKING ACTION

Try to complete at least one species survey every year at about the same time to show that the actions you are taking are having an impact and, hopefully, increasing the number and diversity of plants and pollinators. You can use this as an opportunity for community interaction with individuals and groups by asking for their observations or by organising specific events around recording, such as a BioBlitz. To build confidence, think about group sessions or having a buddy system for new surveyors – two heads (and pairs of eyes) can be better than one.

The **UK Pollinator Monitoring Scheme (PoMS) Flower-Insect Timed (FIT) Count** sounds technical but is actually one of the easiest ways of getting to know your pollinator community and having some data to compare over time. You just spend ten minutes counting the total number of insects that visit a particular patch of flowers in warm, dry weather during daylight hours from 1 April to 30 September.

You can also record the species you encounter on your patch 'as and when', get the tricky ones identified by local experts or online and added to national databases; see below for more information.

If you have a larger area and interested volunteers, consider other monthly surveys such as the Bumblebee Conservation Trust's **BeeWalk** scheme or the **UK Butterfly Monitoring Scheme.**

Again, the results from any of these observations can feed back into your management plans.

Make sure the species you find are being shared more widely to maximise their value, either through submitting through one of the schemes, apps or via Kent & Medway Biological Records Centre.

TAKING ACTION

It's now time to start thinking about how you can improve your area for pollinators. See the table below for some suggestions.

A few points to consider when planning actions:

- Consider how a space is used by the community
- Don't worry if you can only provide for some of the pollinator needs on one site
- Don't damage what you already have of value for the sake of creating new habitats
- Don't manage for just one species or group unless it's particularly rare and you are part of a wider program

Raise Awareness

Some residents or visitors may have questions about why change is happening. This may be because an area is being left to become 'untidy', is being disturbed as part of a process or because access may be restricted, temporarily or permanently.

Where possible, include signage (or an article in a local newsletter, notice board or social media)

EXPLAIN – let people know why change is happening in public areas

EDUCATE – provide information on why it is important

ENCOURAGE - include suggestions for what the reader can do to help

Community involvement

There are many ways you could involve your local community in your actions or with your site and you will know best what is appropriate to both the location and your target audiences. Here are some suggestions:

- open days/tours
- pollinator walks and talks
- art sessions focussed on pollinators
- volunteer planting events
- litter picks prior to mowing
- pollinator fayres
- seed swaps
- street cleansing
- bioblitzes

CASE STUDIES

Woodchurch Wildflower Meadow

The meadow was gifted in 2015 to the Parish Council as an extension to the Village Green. Local school children sowed wildflowers on part of the site and it is now managed by Woodchurch in Bloom volunteers. They are working to establish areas that will flower at different times of year and to reduce the fertility of the site, as well as planting up many containers in the village.

Tenterden

The community group Tenterden Wildlife teamed up with KCC, Tenterden Town Council, Ashford Borough Council and their contractors Aspire to introduce more flowers to the lawns along the High Street. As part of this project, they have communicated with residents about their plans and installed signage to let people know what is happening.

Dane Valley Woods

This site is a community woodland established on a former landfill site in Margate. The woods have been managed by a volunteer group for over 20 years. While increasing tree cover on Thanet is important, they have also made space for several flower-rich glades for pollinators.

Friends of Milton Creek

Milton Creek Country Park in Sittingbourne is managed by the park ranger and his volunteers. It is an important site for many pollinators including the rare Shrill Carder Bumblebee. In addition to all their habitat work and community engagement, the Friends carry out monthly surveys of the species on the site which includes a very important BeeWalk.

Community gardens

There are over 20 community garden projects across Kent. Their objectives are as diverse as their locations and communities and include vegetable production for the community, physical and mental wellbeing and reclaiming local greenspaces. They also provide many resources for pollinators and other wildlife and this is often a specific objective.

ACTIONS FOR POLLINATORS

Below is a list of potential actions for pollinators. In many cases, you can start with the appendices, then follow other suggested guidance if you want more detail:

Task	Sustenance	Shelter	Reproduction	How to achieve these actions
Protect your existing resources	See below	See below	See below	Having identified existing sources of food and shelter for pollinators, protect them as much as possible. Maybe use signage to identify these to the community and explain their importance.
Maintain/plant a new hedgerow	Good for a range of insects, especially early Spring species	Provides shelter all year-round including hibernation at the base	Lots of nesting material Supports habitat connectivity	**Appendix D** Wildlife Trusts' Guide to making a wildlife hedge How-to Guide: Hedgerows for Pollinators. All-Ireland Pollinator Plan Gardeners' World guide to planting a bare root hedge
Reduce mowing of grass verges, parks and green spaces where appropriate	Allows flowering plants to flourish, increasing available nectar sources	Long grass swards create additional habitat structure	Increases the range of available breeding areas Supports habitat connectivity	**Appendix J** Take part in No Mow May/Let it Bloom June or, better yet, alter mowing regimes for the whole year Plantlife's No Mow May Movement webpage
Allow natural regeneration of the flower community **Add wildflower seeds, bulbs and plug plants** **Set aside space to create a meadow**	Increases the number of available flowering plants and variety of species	Additional species increases the range of shelter opportunities	Increases the range of available breeding areas Supports habitat connectivity, can create stepping stone habitats	**Appendix J - L** The Wildlife Trusts' guide to growing a wild patch or mini-meadow webpage The Wildlife Trusts' suggested plants for pollinators All-Ireland Pollinator Plan lists of Top Ten plants for different situations How-to Guide: Collecting and using wildlfower seed for pollinators. All-Ireland Pollinator Plan RHS guide to creating wildflower meadows How-to Guide: Creating and restoring meadows in local communities and gardens. All-Ireland Pollinator Plan Plantlife's Managing Meadows website
Install pollinator friendly urban planters, flower boxes, baskets	Increases the number of available flowering plants and range of species	Additional species increases the range of shelter opportunities	Increases the range of available breeding areas Supports habitat connectivity, can create steppingstone habitats	**Appendix G** The Wildlife Trusts' guide to how to create a container garden for wildlife Eynsford Parish Council guide to wildlife friendly hanging baskets RHS Top 10 patio plants for bees

Task	Sustenance	Shelter	Reproduction	How to achieve these actions
Create water sources / ponds	Makes water available, plus increase the range of plant species	Creates different opportunities for species	Supports habitat connectivity, can create steppingstone habitats Some species need water bodies to complete their life cycle	**Appendix F** Kent Wildlife Trust's How to create a mini pond webpage The Wildlife Trusts' guide to how to build a pond The ARC Trust guide to Creating Garden Ponds for Wildlife Buglife's Bug Friendly Garden Ponds guide Wildfowl And Wetland Trust's Guide to native pond plants The Hoverfly Lagoons project website
Encourage wildlife gardening in allotments, gardens and schools	Allows flowering plants to flourish, increasing available nectar sources	Creates different opportunities for species	Supports habitat connectivity, can create steppingstone habitats	**Appendix E** Bumblebee Conservation Trust's Planting guide for community and gardening groups The Wildlife Trusts' guide to How to help wildlife at school The Wildlife Trusts' guide to How to start a wildlife garden from scratch The Wildlife Trusts How to create a simple vertical garden webpage
Build bee hotels		Provides shelter all year round	Supports habitat connectivity, can create steppingstone habitats	**Appendix I** The Pollinator Garden: How to Make and Manage a Bee Hotel: Instructions that Really Work webpage Api:Cultural's Nesting Habitat for Bees webpage The Wildlife Trust's How to make a bee hotel webpage How-to Guide: Creating wild pollinator nesting habitat. All-Ireland Pollinator Plan
Create other nesting habitat – bare soil, earthbanks and drystone walls		Provides shelter all year round	Supports habitat connectivity, can create steppingstone habitats Provide more breeding spaces, especially for solitary bees	**Appendix H** How-to Guide: Creating wild pollinator nesting habitat. All-Ireland Pollinator Plan Buglife's Guide to creating a bee bank An example of a bee bank project in West Sussex from the RSPB website PTES guide to making small pockets of habitat for ground nesting bees Api:Cultural's Nesting Habitat for Bees webpage
Tree planting - including community orchards	Good for a range of insects, especially early Spring species	Provides shelter all year round	Lots of nesting material Supports habitat connectivity	**see Appendix N** Kent Plan Tree webpage Guide to planting trees for pollinators. All-Ireland Pollinator Plan Orchards for Pollinators flyer. All-Ireland Pollinator Plan. How-to Guide: Traditional Orchards and Fruit Trees for Pollinators on the Farm. All-Ireland Pollinator Plan.

Task	Sustenance	Shelter	Reproduction	How to achieve these actions
Add in pollinator Infrastructure e.g. green-roofed bus-stops, bin shelters or insect-hotel notice boards	Increases the number of available flowering plants and range of species	Creates different opportunities for species Provides shelter all year round	Supports habitat connectivity, can create steppingstone habitats	Buglife's Best Practice Guide on Creating green roofs for invertebrates Creating Biodiverse Green Roofs For Pollinators – webpage from The Jersey Pollinator Project
Take part in Citizen Science projects		Creates different opportunities for species	Supports habitat connectivity	Wildlife Gardening & Citizen Science Projects - The Buzz Club website The Pollinator Garden: Citizen Science webpage Pollinator Monitoring and Citizen Science: A practical guide for project organisers and participants. UK Centre for Ecology & Hydrology, Wallingford, UK. National BioBlitz Network website UK Pollinator Monitoring Scheme (POMS) website: a quick 10-minute survey observing some flowers and seeing which insects visit them. These Flower-Insect Timed (FIT) Counts begin in April and do not require too much knowledge of species, so everyone can get involved. Buglife and Kent Wildlife Trust's Bugs Matter webpage: From June, clean your number plate before a journey in the car. When you reach your destination, record the number of insects squashed on the plate. It's that simple and is all on a handy app! Butterfly Conservation's ***Big Butterfly Count website***: Across July and August, record the butterflies you see in 15 minutes. There is an app you can upload your results to. Using apps: You can download apps such as the iRecord app where you can input any pollinator or wildflower sightings. Your contributions are verified by experts and add to a global database of research and knowledge. No Mow May – every flower counts webpage: As part of the "No Mow May" campaign, those taking part are asked to see which flowers grew in their lawn because of not mowing it. Moth traps: whilst you may think you need all the fancy light traps and equipment, moth trapping couldn't be easier. All you need is a white sheet and a bright torch, shine the light on the sheet and see which moths appear: Kent Wildlife Trust guide to moth traps If you want to develop your knowledge and record more frequently on your local patch, explore the websites for the Garden Butterfly Survey, BeeWalk and the Butterfly Monitoring Scheme. These are national recording schemes that can provide training and support. Individual volunteers follow the same methods

Task	Sustenance	Shelter	Reproduction	How to achieve these actions
Honeybees	Requires a minimum of 1ha of flower-rich habitat throughout the active season per hive (approximately the area of a football field)			Honeybees are not a focus of Kent's Plan Bee as they are a domesticated species with managed populations and are not in decline, unlike many of our wild species. You can get a honeybee hive if a crop needs honeybee pollination or if you want to start a new hobby, but it is not the best thing to do for biodiversity on your patch. If you are still thinking of getting a hive of honeybees: • Contact your local beekeeping association to get training on how to keep healthy honeybees • Ensure there is enough forage provided locally through the year per hive to limit competition with wild pollinators • Don't place apiaries within 2 km of nature reserves and areas of importance for wild pollinators. Register hives with DEFRA on the Beebase website.
Pesticides				Pesticides should only be used for weed control on your site when absolutely necessary and where alternative weed control measures are not viable. To minimise negative impacts on pollinators it is important that pesticides are used sustainably and efforts should be made to minimise their impact on non-target species like bees. • Strimmers can be used along grass edges that mowers can't reach instead of spraying pesticides • Pesticides should always be applied exactly according to manufacturer guidelines and following best practice

GUIDANCE FOR ACHIEVING THESE ACTIONS

OTHER ADVICE

- Royal Horticultural Society RHS Plants for Pollinators webpage: a regularly reviewed set of plant lists for gardens, including ones for specific pollinator groups, and other resources.
- Kent Wildlife Trust Gardening for a Wilder Kent webpage: the page for Wild About Gardens with resources for improving gardens for all wildlife.
- Buglife Pollinator Guidance: covers many topics such as the B-lines system, gardening, citizen science, with many videos and leaflets on topics including bee bank creation.
- Butterfly Conservation Wild Spaces website: guidance and case studies for spaces of all sizes.
- Bumblebee Conservation Trust Bee the change webpage: resources and articles on gardening for bumblebees.
- Denbighshire Countryside Service Wildlife Gardening Information Pack
- All-Ireland Pollinator Plan website: extensive resources for many different parts of a community.
- Government advice on setting up and managing a Local Nature Reserve on the GOV.UK website.

SPECIES RECORDING APPS

- iRecord app: for recording any species in any place
- iRecord Butterflies app: specific app for butterfly identification and recording

POSSIBLE SOURCES OF FUNDING

A lot of these actions require funding. Here are some possible options:

Kent County Council's guide to community grants and funding

Kent Countryside Partnerships website – these organisations can help with applications

The National Lottery Heritage Fund website

Community Garden Grants - National Garden Scheme webpage

Councillor Ward Grants – these may be at County, District/Borough or Town level.

Biodiversity Net Gain (BNG) is a possible future source of funding – check GOV.UK for updates

Environment Land Management schemes and other grants on the GOV.UK website

Supermarket Community Funding schemes:

Co-op Community Fund website

Asda Foundation website

Tesco Stronger Starts on the Groundwork website

One Stop Community Partnership on the Groundwork website

Morrison Foundation website

Sainsburys: Do you support local charities and events? webpage

Local business sponsorship

PHYSICAL RESOURCES

Plants

If you are trying to create a natural plant community, it is always best to first allow natural regeneration and colonisation on your site, then to use green hay, and finally to add responsibly collected seed of local provenance or other plant material. Local seeds and plants are also more likely to germinate and survive, as they are what should naturally occur in that habitat.

Plants for short grassland: dandelion, dead-nettles, selfheal, bird's-foot trefoils, red clover, daisy, meadow buttercup, common knapweed, cowslip, lawn chamomile, meadow vetchling, ox-eye daisy, white clover, wild marjoram, yarrow.

Example seedmix for Annual Wildflower Beds: field poppy, cornflower, corn marigold, corncockle, corn chamomile.

Example seedmix for Perennial Wildflower Beds: bird's foot trefoil, yellow rattle, field scabious, common knapweed, oxeye daisy, wild red clover, selfheal, meadow buttercup, meadow cranesbill, bedstraws.

SUPPLIERS INCLUDE:

FOR SEEDS:

Emorsgate Seeds website

NatureScape website

Enchanted Gardens website

Agrifactor website

Habitat Aid website

Landlife Wildflowers website

Meadowmania website

Boston Seeds website

FOR PLANTS:

Local garden centres and nurseries – look for the bee friendly label

Plants for ponds website

NatureScape website

Enchanted Gardens website

Rosybee website

Meadowmania website

Shipton Bulbs website

Habitat Aid website

Landlife Wildflowers website

Trees

Kent Plan Tree webpage

The Tree Council - Grant funding to support tree, hedgerow and orchard establishment webpage

Woodland Trust - Tree pack application form webpage

Volunteers

Businesses and other organisations looking for volunteer days can be a useful source of workers

Kent Countryside Partnerships website

Kent Volunteers website - Guidance for volunteer-involving groups and volunteers

Kent County Council's volunteering webpage

APPENDICES

A Pollinators' needs

B Calendar of Routine Activities

C Plants for Pollinators

D Hedgerows for Pollinators

E Managing your Allotment for Pollinators

F Providing Water for Pollinators

G Containers for Pollinators

H Creating Habitat for Mining Bees

I Creating Habitat for Cavity Nesters

J Managing your Lawn for Pollinators

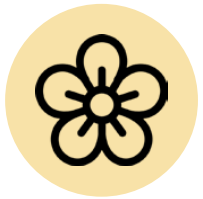
K Meadow Creation

L Creating a Wildflower Meadow

M Rapid Plant Survey

N Trees for Pollinators

A: POLLINATORS NEEDS

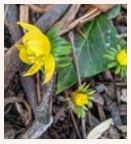
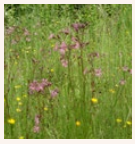
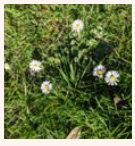
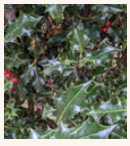
POLLINATORS	FORAGING NEEDS	NESTING NEEDS	WHAT YOU CAN DO
BEES	Nectar-rich flowers in the blue/purple light spectrum	Bee hotels, leaf litter, grass tussocks, bare earth, plants that provide nesting materials	Provide a diversity of flower shapes throughout the year
BUTTERFLIES	Nectar-rich flowers	Make sure that the caterpillar food plants are also available	Plant blocks of the same flower for butterflies to easily find
MOTHS	Flowers that produce nectar in the evenings e.g. Jasmines	Make sure that the caterpillar food plants are also available	Provide year round range of night-scented flowers
WASPS	Fruit trees provide for most of the year: flowers & fruit	Wood pulp for hanging nests, bare earth for ground nests	Learn how important they are to us for pest control
FLIES	Easily accessible, flat flowers as do not have 'tongues'	Some lay eggs in water, so provide a pond for larvae	Provide water bodies, a bog garden or a hoverfly lagoon
BEETLES	Open, white flowers are a favourite	Leaf litter and dead-wood (both standing and lying)	Build log piles

B: CALENDAR OF ROUTINE ACTIVITIES

MONTH	GRASSLAND	SOWING AND PLANTING	PONDS	TREES AND HEDGES
JAN			Manage aquatic vegetation	Tree and hedgerow planting and partial cutting
FEB	Sow wildflowers (heavy clay)			
MAR	First cut of new sown areas when at a height of 10 cm (4")	Plant/ divide perennials	Divide marginal and wetland plants	Prune elder
APR	Light cut if needed after first flowering of dandelions	Sow hardy annuals	Plant/ divide aquatic plants	Prune early flowering shrubs when blossom finished
MAY	No Mow May	Plant hanging baskets		
JUN	Cut spring flowering meadows	Divide spring bulbs	Plant marginal plants Remove excess pondweed	
JUL	Cut and collect hay meadows or if growth is strong Harvest seed or green hay for spreading	Sow biennials for planting in autumn		
AUG	Collect seeds as they ripen on dry days	Plant shrubs		
SEP	Cut and collect meadow areas leaving some long patches	Sow seeds for plug plants next year	Divide aquatic plants	
OCT	Sow wildflowers for next year (not heavy clay) Cut and scarify annual beds	Plant out biennials and perennials	Remove most leaf litter from surface	
NOV	Cut grass if fresh growth	Plant spring bulbs		Tree and hedgerow planting and partial cutting
DEC			Make sure light can get to ponds	

C: PLANTS FOR POLLINATORS

Plant these flowers to help feed the pollinators living in your garden all year round:

POLLINATORS	SPRING	SUMMER	AUTUMN	WINTER
Bees And Wasps	• Bugle • Dead-Nettles • Lungwort • Comfrey	• Allium • Borage • Viper's Bugloss • Foxglove	• Teasel • Ivy • Cardoon • Scabious	• Crocus • Hellebore • Winter Heather • Aconite
	 *Red Dead-nettle*  *Lungwort*	 *Viper's Bugloss*  *Foxglove*	 *Cardoon*  *Scabious*	 *Crocus*  *Aconite*
Butterflies	• Grape Hyacinth • Forget-me-not • Rosemary • Primrose	• Bird's-foot Trefoil • Buddleia • Marjoram • Lavender	• Knapweed • Verbena • Hemp Agrimony • Honeysuckle	• Goat Willow • Winter Heather • Snowdrop
	 *Primrose*  *Forget-me-not*	 *Bird's foot Trefoil*  *Marjoram*	 *Hemp Agrimony*  *Knapweed*	 *Winter Heather*  *Snowdrop*
Moths	• Sweet Rocket • Ragged Robin • Bird Cherry • Wallflower	• Thyme • Night-scented Stock • Borage	• Honeysuckle • Jasmine • Evening Primrose • Red Valerian	• Mahonia • Blackthorn • Gorse
	 *Ragged Robin*  *Bird Cherry*	 *Buddleia*  *Borage*	 *Honeysuckle*  *Evening Primrose*	 *Blackthorn*  *Gorse*
Beetles	• Daisy • Cow Parsley • Tansy • Garlic Mustard	• Carrot • St John's Wort • Fleabane • Fennel	• Cornflower • Ivy • Meadowsweet • Wild carrot	• Holly • Witch Hazel • Winter Daphne • Colt's-foot
	 *Daisy*  *Cow Parsley*	 *Wild Carrot*  *St John's Wort*	 *Cornflower*  *Meadowsweet*	 *Holly*  *Colts-foot*
Flies & Hoverflies	• Ox-eye Daisy • Cow Parsley • Euphorbia • Dandelion	• Rose • Feverfew • Green Alkanet • Marjoram	• Sunflower • Ivy • Hemp Agrimony • Blackberry	• Crocus • Viburnum • Willow • Gorse
	 *Dandelion*  *Euphorbia*	 *Rose*  *Feverflow*	 *Sunflower*  *Blackberry*	 *Willow*  *Viburnum*

Don't forget you can provide shelter, larval food plants and nesting sites in your garden too!

D: HEDGEROWS FOR POLLINATORS

Having hedges rather than using fences or walls allows wildlife to travel more easily within a landscape. They can provide flowers (both from hedge trees/shrubs and vegetation at base), larval food and habitat, nesting opportunities, shelter, hibernation, and wind breaks. South-facing sides will be sunny and warm while the shady north side can prevent overheating.

You may be thinking of planting a new hedge on your site or it may contain ancient or recent hedges already, which you wish to maintain or enhance for pollinators.

A good hedgerow for pollinators will:

- Be thick, tall and dense with diversity in its structure
- Have a good flowering sequence through the spring and summer
- Flowery and/or grassy buffer strips on either side of the hedge

Plant Common Name	MONTHS OF FLOWERING											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Common Gorse												
Goat Willow												
Blackthorn												
Crab Apple												
Field Maple												
Hawthorn												
Guelder-rose												
Elder												
Dogwood												

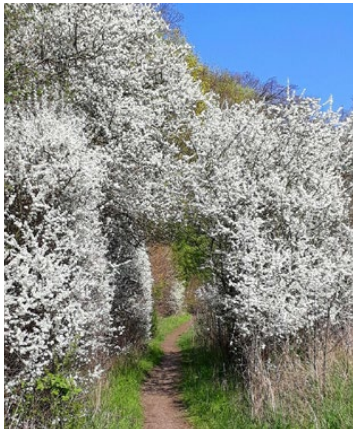
Improve an existing hedge for pollinators

- Add climbers such as Common Ivy, Bramble, Dog Rose, Climbing Rose or Honeysuckle
- Avoid severe flailing and full annual cutting wherever possible. Partial hedge-laying is the best approach. Alternatively, cut sections in late winter on 2-5 year rotation or at different times of the year.
- When gaps appear, think about replanting to create more continuous flowering
- Retain/ increase the number of tall standard hedgerow trees.
- Develop grassy margins at the base. Cut these once a year, or sections on rotation every 2-3 years in the autumn. Remove the clippings.
- In an ornamental setting, establish shrubs at the base to minimise disturbance.

Planning a new hedge

Try to maximise the richness of native tree, shrub, grass and wildflower species to provide a range of caterpillar foodplants and nectar/pollen sources.

Hawthorn and Blackthorn alone provide nectar in the summer and food for the larvae of more than a hundred moth species.



E: MANAGING YOUR ALLOTMENT FOR POLLINATORS

Want to increase the pollinator diversity on your allotment or veggie patch? No matter the size, there is a way to manage it to benefit pollinators alongside growing your own.

Grow pollinator friendly fruit and vegetables

Fruit and vegetables can have nectar and pollen-rich flowers that pollinators love and the more flowers you have in your garden, the more pollinators you can support. In return, the pollinated flowers turn into produce for you to eat later in the year. It's a win-win situation!

Download the "Grow your own fruit and vegetables" guide from the Bumblebee Conservation Trust website for more information.

Fruit and vegetables to Plant for pollinators

Strawberries

Tomatoes

Broad beans

Peas

Courgettes

Squashes and Pumpkins

Plant the seeds in the spring, they will flower in the summer for pollinators and the produce will follow in the late summer/autumn

Grow Companion Plants

Companion planting is a great way of repelling pests from your fruit and veg, as well as making the most of the space. It's also great for pollinators as they'll come from miles around for the abundant flower food source in your garden.

As a bonus, all the companion plants mentioned on the left are edible, and make great additions to salads, drinks, and cooked dishes.

For more information on companion planting, search "How to do Companion Planting" on the Kent Wildlife Trust website.

Companion plants for pollinators

Companion Plants	Grow with	Helps by
Nasturtiums	Beans	Being a sacrificial plant as caterpillars & aphids eat these instead of beans. Attracting hoverflies to prey on pests.
Mint and other strong-smelling herbs	Tomatoes, Squashes & Courgettes	Confusing & repelling many pests with their strong smells
Marigold/Calendula	Courgettes, Tomatoes & Beans	Repelling whitefly and luring aphids away from beans
Borage	Tomatoes & Strawberries	Attracting pollinators to fertilise the flowers Enhancing the flavour of strawberries
Summer Savory	Broad bean	Detering blackfly

Provide Water

Pollinators need water as well as food. Add water to your allotment by building a wildlife pond (with permission) or have a pollinator watering station.

Provide a bee or bug hotel for shelter

If pollinators have shelter, they are much more likely to hang around. Why not build a bug hotel, so natural predators of pests have a place to stay?

Remove pests without using chemicals

Use natural solutions to pest removal on the allotment by physically removing them yourself or adding natural physical barriers such as crushed eggshells.

For more information, search "Chemical Free Organic Gardening" on the Kent Wildlife Trust website

F: PROVIDING WATER FOR POLLINATORS

Pollinators can make use of water sources in a number of ways:

- Pollinators need water to keep their bodies functioning healthily just like other animals.
- Many hoverflies and even some moths have larvae that develop in water and waterlogged soil.
- Butterflies acquire minerals by drinking from non-floral moisture sources – this is why they can be found drinking from "dirty" puddles and even dung.
- Honeybees use water both in honey production and for temperature regulation in hives.

Depending on your available space and resources, there are a number of ways to provide water for pollinators:

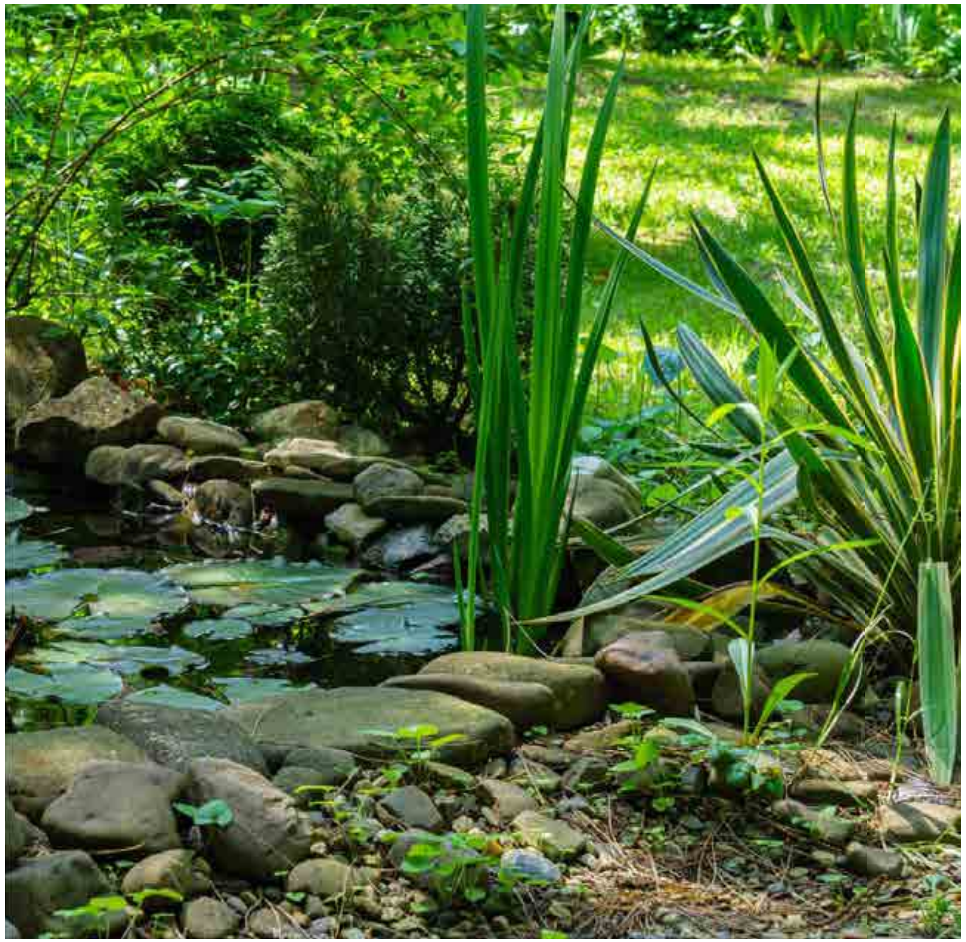
Insect Watering Station

Fill the base of a shallow dish or bowl with stones, pebbles, marbles or other small items. Add water to about two thirds of the height of the contents. This gives insects somewhere to land, stand on and drink the water without falling in and drowning. Place in a sheltered spot near to flowers. Replace or refill the water regularly.

Ponds

If you have more space, you can start to provide not just water, but also food and potential breeding habitat in a deeper container or by digging a pond. Choose a position that gets light but is not in full sunlight all day. Fill the pond with rainwater, if possible. If you have to use tap water, let it stand for 2-3 weeks before adding plants to allow time for nutrients, like chlorine and fluoride, to evaporate.

Adding plants provides insects with food, a surface to drink from and somewhere for adults to emerge after aquatic larvae have completed their development. Try to use native aquatic and margin plants and avoid invasive species. An alternative way of providing larval habitat is to create a bog garden or hoverfly lagoon.



Container ponds

This could be made from a bucket, a large plastic flowerpot, a sink, a barrel or whatever you have available. As long as it can be made watertight and isn't contaminated with anything hazardous to wildlife.

Your container can be sunk into a hole or sit on the surface. Add gravel or rocks up to the surface on one 'side' so insects can access the water and other wildlife can get in and out.

To make getting water into a pond easier, you could try out a container fed directly from the drainpipe - How to build a mini drainpipe wetland on the Wildfowl and Wetlands Trust website

Wildlife pond

There is a lot of guidance available on pond construction. With more room, you can add different plants from the deepest point to the surrounding ground, depending on design and preference. Include shallow edge(s) for wildlife to use for safe access and escape. Do not add fish to your pond as they will eat invertebrates.

G: CONTAINERS FOR POLLINATORS

Planters, hanging baskets and window boxes have been used for many years to bring a splash of colour to streets, balconies and lampposts. But they can also provide a vibrant haven for pollinating insects in areas where food and shelter may be scarce. Newer ideas like living walls and vertical meadows can also be useful to biodiversity.

Often the plants that are preferred for containers contain little pollen or nectar or it is inaccessible to our native pollinators, either because the flowers are adapted for insects in another region or due to breeding for double blooms. Some bedding plants may also have been treated with pesticides that could affect the insects when they feed.

Some parishes and groups in Kent are already taking pollinators into consideration when planting their containers.

Selecting the right flowers

You don't have to use native plants to provide value for pollinators but you do need to include nectar-rich, accessible plants. Think about creating different layers and heights, and you'll provide something for lots of different species.

Containers for pollinators can be based on annual or perennial plants, may be intended for sunny or shady locations and can be used for growing herbs or crops.

Consider choosing drought-tolerant plants to reduce the need for watering (or to survive when you forget) and use materials like liners and gels that will retain the water for longer.

In the table are some suggestions but what you choose will depend on preference and there are many other choices. Remember to choose single-flowered and short/dwarf varieties for baskets.

Trailing plants	Upright plants	Herbs
Aubretia	Brachyscome	Chives
Bacopa	Candytuft	Fennel
Bidens	Crocus	Lavender
Bird's-foot Trefoil	Geranium	Mint
Calibrachoa	Geum	Oregano
Diascia	Heliotrope	Parsley
Dichondra	Hyssop	Rosemary
Fuchsia	Knapweed	Sage
Geranium	Lysimachia	Thyme
Lithodora	Marigold	
Lobelia	Mexican Fleabane	**Fruits and Vegetables**
Lobularia	Nemesia	Blackberry
Lysimachia	Nepeta	Chilli peppers
Nasturtium	Nicotiana	Cucumber
Pelargonium	Osteospermum	Dwarf beans
Petunia	Pelargonium	Gooseberries
Surfinia	Plectranthus	Raspberries
	Primula	Salad leaves
	Salvia	Spinach
	Scabious	Strawberry
	Sedum	Tomato
	Snapdragon	
	Verbena	

H: CREATING HABITAT FOR MINING BEES

Less than 15% of our wild solitary bees are cavity-nesting species that will use a bee hotel. Creating ground-nesting habitat for the much more common mining bees and wasps is important and can also be useful to a wider range of species.

There are several actions that could help:

- Protect existing surfaces, either horizontal or vertical, that can be used for nesting. This could include lawns and borders; check for evidence of nesting before disturbing them.
- Clear or cut into existing ridges and banks on your site, where safe to do so.
- Look for opportunities from other works on the site or nearby which either disturb the soil, remove topsoil or generate waste subsoil or sand.
- Create something from scratch

You can construct artificial features of almost any size from a large plant pot upwards. Use a free draining, fine substrate or mix in gravel and make sure the ground underneath is not too compacted – the nests won't survive getting flooded in winter.

Choose a sheltered spot that receives full sunshine. When cutting into existing features or creating a new one, try to have the most vertical surfaces facing to the South or South-East to maximise sun exposure. Building a crescent shape will also help to trap warmth and create a variety of orientations that will benefit many different invertebrates.

Make sure there are lots of wildflowers nearby but don't plant on the actual bank, to maintain the bare surfaces for longer. Mammals may like to dig at a newly-created bank and birds could adopt it as a dirt bath, so consider netting or mesh to protect it while it stabilises.

To manage your bee bank over time, clear vegetation from a portion each winter. Try not to clear the whole bank and try to minimise disturbance to the surface.

Many solitary bee species are only active for a few weeks each year so you might not spot them. The rest of the time the bees are either developing or hibernating in the nest, so it's important not to disturb nest sites throughout the year. Make sure pesticides are not used on the area and consider signage to help prevent disturbance.

I: CREATING HABITAT FOR CAVITY NESTERS

If you plan on providing nesting opportunities for cavity nesting bees, such as mason and leaf-cutting bees, try to position them in full sun.

Don't clear away all plant material at the end of the growing season, like reeds or bramble, as some insects can use the stems as nest sites.

The crevices in stone walls and some wooden structures may provide nesting habitat for some solitary bees. Remove any unwanted vegetation manually rather than using pesticides.

Gabions as barriers or retaining walls are cheap – what can you fill them with? How about rubble and other waste building materials to save money and create nesting habitat.

Logs or tree trunks that have been fed on by beetles can have useful natural tunnels which can be used by bees. Just be sure to put them in sunny, well-drained areas.

Think about other resources the bees need nearby for nesting like shrub leaves for leafcutters (they aren't fussy) and loose soil/mud for mason bees.

Create artificial nest sites

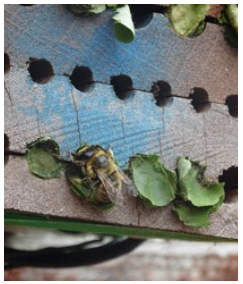
Many of our solitary bees can't carve their own nests. You can help them by creating bundles of bamboo canes (make sure the closed nodes are far enough from the open end), reed stems and herbaceous perennial stems with varying diameters. Alternatively, you can provide artificial tunnels or tubes made of breathable substances like wood, ceramics, card and other plant material.

Or you could build a bee hotel

Bee hotels should be no bigger than an average bird box. Large bee hotels can encourage the spread of disease and attract predators. Hotels should either be sited so that they stay dry in wet weather or have a sloping roof or projecting rim.

Ensure material is free from treatment or preservatives. If possible, provide holes of different diameters to attract different species. They should be 10cm or more in depth and between 2mm and 10mm in diameter. Holes should be smooth inside with no splinters, etc. around the entrance.

Positioning:



- Place 1-2.5m above ground and avoid facing the entrance to the North.
- Keep away from bird feeders
- Make sure there are some flowers close to your hotel.

Maintenance

Some structures may need moving into a cool, dry shelter over winter to protect the nests from bad weather. Others such as paper or card-based nesting tubes may be removable so that fresh tubes can be swapped in each spring.

If there is no sign that bees are using your structure after two years, try moving it somewhere else. If it has been successful for several years, put a replacement nearby before the original gets too old.

NOTE: a *bee hotel* is a structure specifically intended for bee nesting whereas a *bug hotel* is a more general invertebrate shelter. Encouraging bees to nest in a bug hotel could make them food for some of the other residents.

J: MANAGING YOUR LAWN FOR POLLINATORS

Want to increase the flower diversity in your lawn to help pollinators in your garden? No matter how you use your garden, there is a way to manage it to benefit pollinators too.

If you can leave your whole lawn uncut for pollinators, that is great! But not everyone can do that, you may have animals that use the lawn every day, children that play in the garden, and leaving the lawn uncut is not an option. Below are options on how often to mow your lawn given your circumstances, and the benefits that both types of management have for pollinators and you:

Leaving Long Grass

Cut twice a year; once early spring to remove the winter growth and again late summer/autumn once the flowers have gone to seed and dispersed into the lawn.

Benefits: *Increased diversity of flowers. More shelter for pollinators. Letting annual flowers go to seed refills the seed bank, so you do not have to buy new seed each year.*

Creating Different Lawn Lengths

Mowing once a month or every 6 weeks can also support some flowers for pollinators, but try to leave borders or patches of longer, uncut lawn where possible.

Benefits: *Shorter flowers like daisies & clover can bloom. Borders and patches of long grass provide increased flower biodiversity. Paths give you easier access to garden.*

Whether you opt for these or a 'mow-saic' of cuts, don't forget to **check for wildlife before cutting and remove the grass clippings.** It stops excess nutrients returning to the soil, helps seed germination and allows flowers to flourish. Some insects overwinter in long grass, so leave some patches uncut. **There may already be a seedbank waiting to take advantage, so allow some natural regeneration before adding plant species.**

Top tips for managing your lawn:

Adding flowers to your lawn: Seeds need direct contact with soil to germinate. If starting with a full lawn, either remove grass to plant wildflower seeds, or plant flowers as bulbs or plugs (or seedlings you have grown yourself from seed) at intervals in a recently mown lawn.

When to add flowers: Flower plugs with established roots can be planted at most times of the year, but you may need to keep them watered in dry periods. If you are growing your own plugs in autumn, overwinter in an unheated greenhouse or cold frame and plant in the spring.

Which flowers to add: Try to pick native flowers and varieties. You also want to pick a mixture of flower structures to feed a variety of pollinators, and from different flowering seasons to support pollinators throughout the year. Try adding the plants below to your lawn.

Too much grass? Plant Yellow Rattle or Red Bartsia. These are semi-parasitic to grasses, stealing nutrients from the grass roots, and naturally reducing vigorous grass growth or to allow wildflowers to grow.

SPRING
- ***Bugle***
- ***Cowslip***
- ***Dandelion***
- ***Oxeye Daisy***
- ***Primrose***

SUMMER
- ***Bird's-foot Trefoil***
- ***Common Knapweed***
- ***Red Clover***
- ***Selfheal***
- ***Wild Carrot***

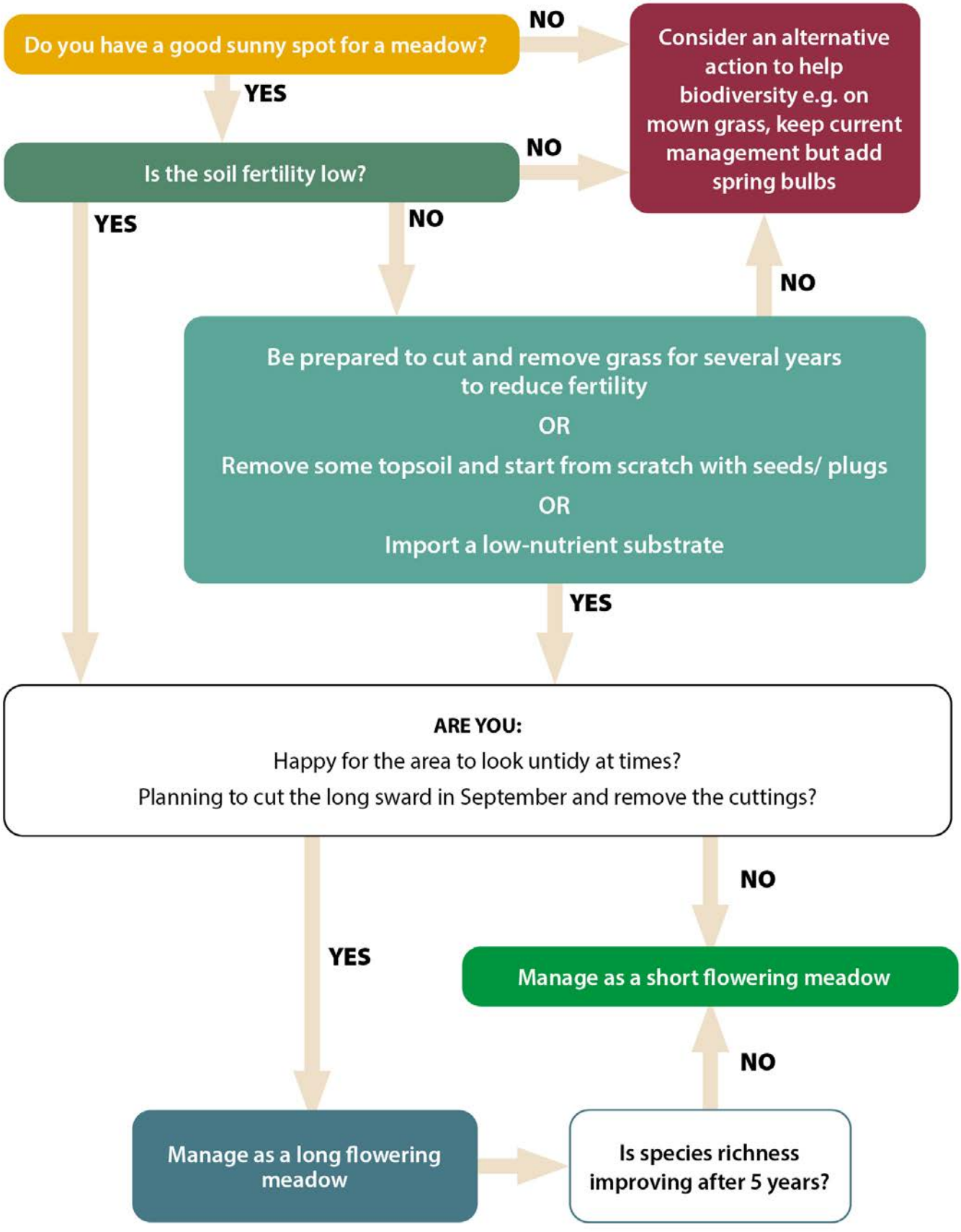
LATE SUMMER
- ***Chamomile***
- ***Field Scabious***
- ***Hemp Agrimony***
- ***Wild Marjoram***
- ***Yarrow***

Perseverance is Key! Getting the diversity of flowers to increase doesn't happen overnight and can take several years to get right. Keep at it, keep removing the grass cuttings and you'll see over time the range of flowers increase, and so will the types of pollinators using your garden!

K: MEADOW CREATION DECISION CHART

IS THE LOCATION ON PUBLIC LAND?

Do you have permission?
Do you have public support?
Is the area accessible for management?
Can you cut margins and paths?
Can you add signage?
Can you control litter?



L: CREATING A WILDFLOWER MEADOW

If a native meadow area of any size cannot be created by reducing mowing of existing grassland, you may need to create one more-or-less from scratch. You could create an ornamental meadow of non-native plants (with lower value for wildlife) but keep these away from wild areas so plants don't escape.

Prepare the site

It is vital to select an appropriate site and prepare the ground before plants are added. Adding seed or plugs to a site which is nutrient rich and/or dominated by coarse vegetation is likely to fail. Unless you are stripping the topsoil or importing substrate, it may take several years of work on such sites before they are fully ready.

Choosing plants

If you decide to deliberately plant a wildflower meadow with seed or plants, they must be native species and originate from the UK, preferably from a local source ('local provenance'). Including yellow rattle in your mix can help keep grasses under control. Choose plants which are appropriate to your ideas and the physical conditions; see what plants are growing in similar semi-natural sites nearby. Suppliers of seed and plants are listed on page 16.

Introducing plants

There are several ways to source seed for use in grassland restoration and creation:

Purchase seed mix

Some suppliers can advise on appropriate mixes for your locality plus when and how to sow them. Planting some commercial mixes risks introducing invasive species, non-meadow species or inappropriate agricultural variants, so remember to check the contents.

Sow in spring or autumn. Some species will require a period of cold to maximise germination.

Harvest seed from flower-rich sites

Seed can be collected for small projects using a hand-held 'leaf vacuum' or by hand for particular meadow species. Alternatively, a brush harvester can collect a large volume of seed but may give a relatively grassy seed mix. Please note: you must have the landowner's permission to collect seed.

Harvest seed in mid-late July

Plant Plugs

You could consider using wildflower plugs, especially for plants that are difficult to establish from seed. Plug planting is useful for amenity areas where it will help provide a good show of flowers in the first year and can be combined with other methods. Rotavating prior to plug and bulb planting may be successful.

Green hay

Effective for large-scale harvesting. Cut and immediately harvest from a small proportion of an appropriate flower-rich donor site. The 'green hay' is quickly transported to the new meadow site, where it is spread over the ground and left for the seeds to fall over a few days as the hay dries.

Harvest and spread in mid-July

Wildflower Turf

An easier, but more expensive, way to create a meadow from scratch is to lay wildflower-rich turf onto prepared ground, particularly if you need fast results or if there are high levels of weed seeds (as the turf will reduce germination). Make sure you buy turf on a plastic-free felt base.

Establishment: Years 1 – 5

To prevent grass domination, keep the grass short after sowing to help germination and cut and collect in spring and autumn, if necessary, in the first few years of establishment. Meadows of annual plants will require some disturbance and possibly reseeding to maintain the desired plant community.

M: PLANT DIVERSITY SURVEY METHOD

Adapted from the Magnificent Meadows Rapid Assessment Methodology

Before the survey

- Select 10-15 positive indicator species for the site. This can be done based on prior site knowledge or deliberate management (e.g. seed sown, plugs planted) but if this is the first site visit then a generic list of key forage plants for the habitat can be used and leave space on your form to make changes and additions when out on site
- If appropriate and useful, select negative indicator species that require monitoring
- Set some qualifying questions. A standard qualifier question should probably be the ratio of herbs/grass e.g. 'Is the cover of herbs >40%?' but it could also refer to specific plants e.g. nettles, brambles or particular conditions on your site.
- Use these indicator species and qualifying questions to populate your field recording form

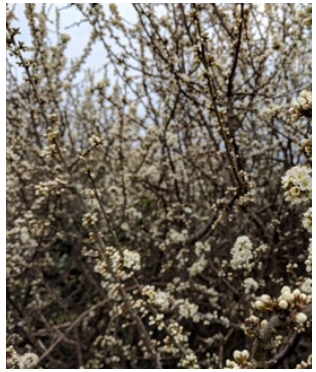
Carrying out the survey

- Record site details, recorder name, site grid reference on the form
- If there is space, carry out a w-shaped walk across the site or in each section to be surveyed
- Stop at up to 20 sample points along your w-shaped walk, evenly distributed along the route
- Each sample point is a 1x1m square. You could mark this out with pegs and string or some sort of mobile frame.
- Within each sample point record the presence or absence of each of your indicator species and record responses to qualifier questions.
- Alongside the rapid assessment, record a species list of any other plants identified but not included in the sample points. You may want to estimate how abundant/rare they are on the site.
- Record any other notes and records of wildlife seen.

After the survey

- Keep your records safe. Maybe scan them or create an electronic version in a spreadsheet or similar.
- The results from one year can then be compared to subsequent years to see if your management is achieving what you planned. Be consistent in the number of samples between years but you don't need to use the same exact locations.
- They can also be useful when applying for funding or proving that your site has value.

N: TREES FOR POLLINATORS
WIND POLLINATED EARLY/LATE FLOWERING



Blackthorn
Prunus spinosa

Flowers March-April

Pollinators benefited:
The flowers are good sources of pollen and nectar for all pollinators.

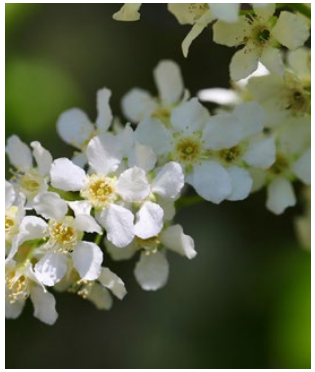
It is a food plant for moth caterpillars, including Lackey, Magpie, Swallow-tailed and Yellow-tailed. Butterfly caterpillars supported are the Black and Brown Hairstreaks.

Dogwood
Cornus sanguinea

Flowers April-May

Pollinators benefited:
The flowers are good for all pollinators.

It is a food plant for moth caterpillars, including Case-bearer moths.



Bird Cherry
Prunus padus

Flowers April-May

Pollinators benefited:
The flowers are good sources of pollen and nectar for all pollinators.

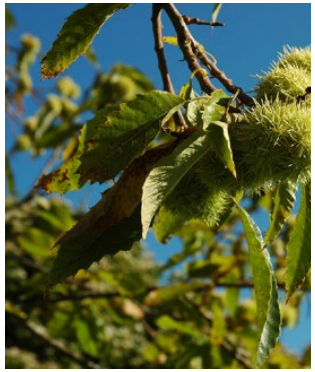
Leaves are food plant for moth caterpillars, including Orchard Ermine, Brimstone, and Short-Cloaked moth.

Crab Apple
Malus sylvestris

Flowers April-May

Pollinators benefited:
The flowers are good sources of pollen and nectar for all pollinators.

It is the food plant for many moth caterpillars, including Eyed Hawkmoth, Green Pug, Chinese Character, and Pale Tussock.



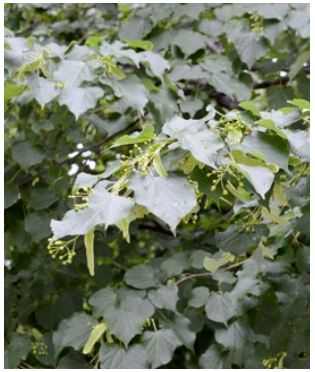
Sweet Chestnut
Castanea sativa

Flowers June-July

Pollinators benefited:
Flowers good for all pollinators.

Heath and Pearl-bordered fritillaries can be associated with Chestnut Coppices.

Food plant for moth caterpillars, including Common Emerald, Feathered Thorn, and Case-bearer moth *Coleophora anatipennella.*



Common Lime
Tilia x europaea

Flowers June-July

Pollinators benefited:
The flowers are good sources of pollen and nectar for all pollinators.

It is the food plant for many moth caterpillars, including the Lime Hawk, Peppered, Vapourer, Triangle, and Scarce Hook-tip moths.

TREES FOR POLLINATORS
WIND POLLINATED

Alder
Alnus glutinosa

Flowers late February-April

Pollinators benefited:
The pollen from this tree is not suitable for pollinators.

It is a food plant for moth caterpillars, including Alder Kitten, Pebble Hook-tip, the Autumnal and the Blue-bordered Carpet moth.

European Larch
Larix decidua

Flowers March-April

Pollinators benefited:
The pollen from this tree is not suitable for pollinators.

It is a food plant for moth caterpillars, including Larch Pug, Bordered White and many others.

Common Box
Buxus sempervirens

Flowers April-May

Pollinators benefited:
Flowers are loved by bees.

Leaves are food plant for moth caterpillars, including the Box-tree moth, which many consider a pest.

Sycamore
Acer pseudoplatanus

Flowers April-May

Pollinators benefited:
The flowers can provide pollen for bees and other pollinators. Food plant for moth caterpillars, including Sycamore moth, Plumed Prominent and Maple Prominent.

Grey Willow
Salix cinerea

Flowers April-May

Pollinators benefited:
The flowers can provide pollen for bees and other pollinators. Food plant for moth caterpillars, including Sallow Kitten, Sallow Clearwing, Dusky Clearwing, and Lunar Hornet Clearwing. Butterfly caterpillars supported are the Purple Emperor.

Oak
Quercus spp

Native species flower April-May. Holm Oak flowers in June

Pollinators benefited:
Flowers provide pollen for bees.

Native oaks are important food plants for the caterpillars of the Purple Hairstreak butterfly. Also, oaks are the food plant for many moth caterpillars, including Mottled Umber.

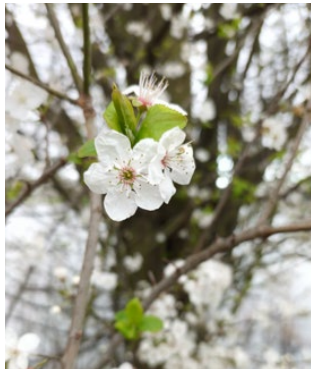
TREES FOR POLLINATORS
EDIBLE FOR HUMANS

Hazel
Corylus avellana

Flowers February-March

Pollinators benefited:
Bees can collect the pollen but with difficulty.

It is a food plant for moth caterpillars, including the Large Emerald, Small White Wave, Barred Umber, and Nut-tree Tussock.



Cherry Plum
Prunus cerasifera

Flowers February-March

Pollinators benefited:
The flowers are great early forage for pollinators.

It is a food plant for moth caterpillars, including Angle Shades, Buff-tip, Winter moth, Feathered Thorn, and several Case-bearer moths.

Pear
Pyrus communis

Flowers March-April

Pollinators benefited:
Flowers are loved by bees, flies, and other pollinators.

Leaves are food plant for moth caterpillars, including Light Brown Apple moth, Gothic, Mottled Umber, and Setaceous Hebrew character.

Plum
Prunus domestica

Flowers March-April

Pollinators benefited:
The flowers good for all pollinators.

Food plant for moth caterpillars, including Angle Shades, Buff-tip, Winter moth, Feathered Thorn, and several Case-bearer moths.

Apple
Malus x domestica

Flowers May-June

Pollinators benefited:
Flowers are loved by bees, flies, and other pollinators.

Food plant for moth caterpillars, including Autumnal moth, November moth, Brimstone moth, Gypsy moth, Common Quaker, and Light Brown Apple moth.

Sour Cherry
Prunus cerasus

Flowers May-June

Pollinators benefited:
The flowers are good sources of pollen and nectar for all pollinators.

The food plant for many moth caterpillars, including Orchard Ermine, Brimstone, and Short-cloaked moth.

TREES FOR POLLINATORS
INSECT POLLINATED MAY FLOWERING

Field Maple
Acer campestre

Flowers May

Pollinators benefited:
Flowers are loved by bees.

It is a food plant for moth caterpillars, including the Mocha.

Crack Willow
Salix fragilis

Flowers May

Pollinators benefited:
The flowers can provide pollen and nectar for bees and other pollinators.

It is a food plant for moth caterpillars, including the Puss moth, Eyed Hawkmoth, and Red Underwing.

Guelder Rose
Viburnum opulus

Flowers May-June

Pollinators benefited:
The flowers are good for all pollinators, but particularly loved by hoverflies.

Leaves are food plant for moth caterpillars, including Privet Hawkmoth & Common Quaker.

Horse Chestnut
Aesculus hippocastanum

Flowers May-June

Pollinators benefited:
The flowers can provide pollen and nectar for bees and other pollinators.

It is the food plant for moth caterpillars, including Triangle moth and Horse Chestnut Leaf-miner.

Spindle
Euonymus europaeus

Flowers May-June

Pollinators benefited:
The flowers are good for all pollinators, such as the St Mark's Fly.

Food plant for moth caterpillars, including the Magpie, Spindle Ermine and Scorched Wing. Butterfly caterpillars supported include the Holly Blue.

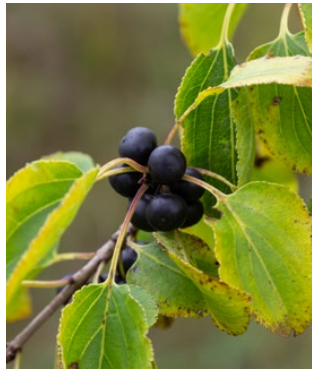
Wayfaring Tree
Viburnum lantana

Flowers May-June

Pollinators benefited:
Flowers provide pollen and nectar for hoverflies and other pollinators.

It is the food plant for many moth caterpillars, including Viburnum Button, *Acleris schalleriana*.

TREES FOR POLLINATORS
INSECT POLLINATED USED BY HUMANS



Buckthorn
Rhamnus cathartica

Flowers May

Pollinators benefited:
The flowers provide pollen & nectar for all pollinators.

Food plant for brimstone butterfly. Also, the food plant for many moth caterpillars, including Common Footman and Dark Dagger.

Berries used to make yellow dye.

Elder
Sambucus nigra

Flowers May

Pollinators benefited:
The flowers are good for all pollinators.

It is a food plant for moth caterpillars, including White-spotted Pug, Swallowtail, Dot moth and Buff Ermine.

Flowers used to make elderflower cordial. Berries used to make preserves and wine.

Hawthorn
Crataegus monogyna

Flowers May-June

Pollinators benefited:
The flowers are good for all pollinators.

It is the food plant for moth caterpillars, including the Hawthorn, Orchard Ermine, Pear Leaf Blister, Light Emerald, Lackey, and Lappet moths.

Berries used in jellies.

Holly
Ilex aquifolium

Flowers May-June

Pollinators benefited:
The flowers are good for all pollinators.

Food plant for moth caterpillars, including the Yellow-barred Brindle, Double-striped Pug, and the Holly Tortrix. Butterfly caterpillars supported are Holly Blues.

Used to decorate at Christmas.

Rowan
Sorbus aucuparia

Flowers May-June

Pollinators benefited:
The flowers provide pollen & nectar for all pollinators.

Food plant for moth caterpillars, including Mottled Beauty, Scalloped Oak, Double-striped Pug, Winter moth, and Brimstone moth.

Berries used in jams.

Wild Service tree
Sorbus torminalis

Flowers May-June

Pollinators benefited:
The flowers provide pollen & nectar for all pollinators.

It is the food plant for moth caterpillars, including Bucculatrix bechsteinella and Phyllonorycter mespilella.

Fruits used to flavour alcohol.

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