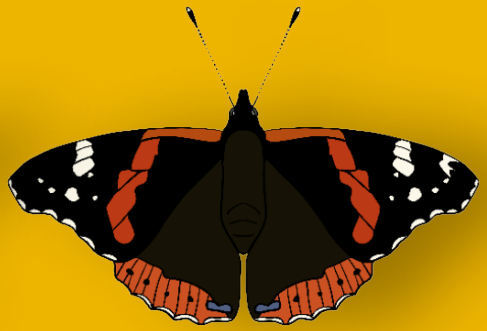
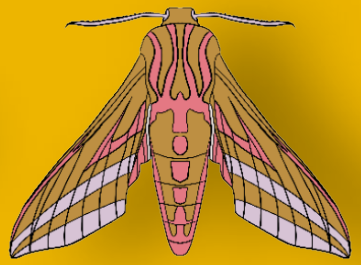
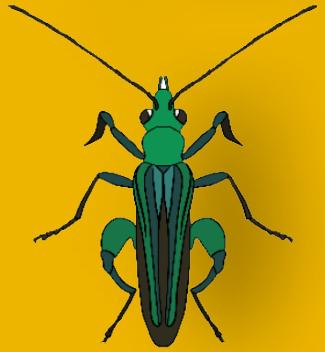
POLLINATORS OF KENT



2025

Produced by Hannah Simmons and Simon Springate.

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FOREWORD

Kent is home to approximately 80% of British bee and moth species, 70% of butterflies, 60% of flies, and more than 65% of beetles. This diversity is in part due to our geographical position relative to mainland Europe, a relatively warm climate and our variety of habitats; downland, valleys, ancient woodlands, wetlands, heaths and extensive diverse coastal areas.

Our lists of known insect species, including pollinators, are regularly being added to through natural migrations, accidental introductions, discoveries and re-discoveries.

But we are also losing species, and many others are declining, primarily due to the loss or fragmentation of habitats. Part of the reason for new species becoming established is climate change which, while increasing the suitable areas for some, will squeeze out others and change whole communities of organisms. Some accidental introductions can also have negative implications, as shown by the arrival of the Yellow-legged Hornet.

This guide provides a short introduction to the groups of insect pollinators to be found in Kent and a small sample of the great species diversity. We hope it helps readers to understand and appreciate some of their insect neighbours that do so much for the economy and beauty of the Garden of England.

WHAT ARE POLLINATORS?

Pollinators are essential to our environment, our food production, and our lives. They are so-called because they carry the reproductive pollen grains from flower to flower, enabling fertilisation for seeds, nuts, and fruit to be produced. Through pollination, new generations of plants grow, which in turn support wild habitats and other wildlife. Without pollination, most wild and cultivated plants, from trees to strawberries, could not reproduce.

Many different insect groups are excellent pollinators. The best known of them are bees, including bumblebees, solitary bees, and the honeybee. But other wild insects are equally vital for pollination including wasps, hoverflies, moths, and butterflies. And even some beetles, mosquitoes and ants have a role in pollination.

Many plants have evolved to offer nectar to attract insects. Whilst insects are feeding on a flower's nectar (for energy) or collecting pollen (as a protein source), pollen grains stick to the insects' bodies and transfer to the reproductive organs of the next flower they visit. However, some insects are accidental pollinators, transferring pollen between flowers on their hunt for prey or potential mating opportunities. Beetles are the best examples of accidental pollinators, with their bodies not often adapted to collecting pollen like a fuzzy bee or moth, but pollen can still stick to them and be transferred during their travels.

WHY ARE POLLINATORS IMPORTANT?

The conservation group Buglife says that every third mouthful of our food depends on insect pollinators. They are central to Kent's fruit farms – 40% of the county's agriculture. They serve crops like oil seed rape, clovers and other nitrogen fixing plants, important for livestock grazing and wildflowers. While managed honeybee colonies can provide some of these pollination services, they are not always the most efficient pollinators of every plant and cannot pollinate others. We need healthy and diverse pollinator communities to ensure this. Pollinators 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. Losing our pollinators would be a major ecological and economic disaster.

Photo: Marbled White on Scabious

HOW TO SURVEY FOR POLLINATORS

Monitoring the number of pollinators is important because it helps to see which pollinators need more conservation help, and if that help is making a difference. There are lots of ways you can contribute:

- 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 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, allowing their data to contribute to research at the national level.

IDENTIFYING ADULT POLLINATORS AT A GLANCE

BEES

IDENTIFYING FEATURES OF BEES

- Two pairs of wings
- Long antennae
- Small eyes appearing to be on the side of the head
- Generally hairy bodied
- Pollen baskets/brushes to collect pollen in females (queens and workers).

Honeybee

HONEYBEES

- Pollen basket (flat shiny areas surrounded by long hairs) present in hind legs of females.
- Hairy eyes.
- Abdomen is barrel- or bullet-shaped.
- Live in very large social groups or colonies in artificial hives or other sites.

Buff-tailed bumblebee

BUMBLEBEES

- Large, dense furry/hairy bodies.
- Pollen baskets present on hind legs of females.
- Live in social groups or colonies of up to a few 100 individuals generally underground or in tussocky grass.
- Cuckoo bumblebee females lay their eggs in the colonies of other species
- and are not social insects. Cuckoo females do not collect pollen.

Ashy Mining Bee

SOLITARY BEES

- Generally smaller than bumblebees.
- Some with little to no body hair.
- Pollen brush instead of basket. Pollen brushes may be on the hind leg or under the abdomen.
- Very diverse with many varied nesting behaviours. They do not form colonies and but may create aggregations of single nests.

IDENTIFYING ADULT POLLINATORS AT A GLANCE

WASPS

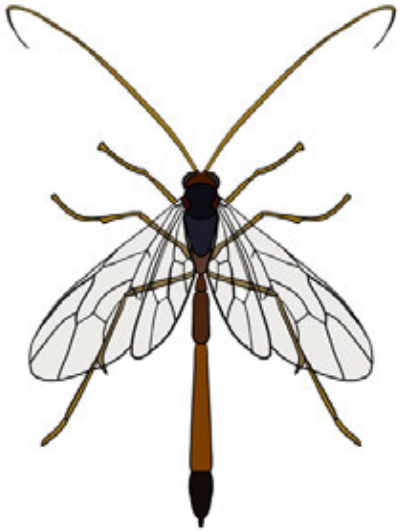
IDENTIFYING FEATURES OF WASPS

- Two pairs of wings
- They have long, slender bodies, distinctive narrow waist, and generally not hairy
- When flying, their legs hang down
- Most wasps capture prey (by stinging and paralysing) to feed to their larvae
- Numerous species feed on nectar as adults
- Important as predators of crop pests but also as pollinators.

Common Wasp

SOCIAL WASPS

- Live in social groups of up to a few 100 individuals in nests constructed from wood pulp.
- Most social wasps are yellow and black banded.



Ichneumon Wasp

SOLITARY WASPS

- Most of the over 250 wasp species in the UK are solitary wasps.
- Solitary wasps come in a wide variety of colours, shapes and sizes.
- Some look a lot like social wasps but others are very small and some very elongate.
- Like the solitary bee species, many solitary wasps nest in soil.

IDENTIFYING ADULT POLLINATORS AT A GLANCE

BUTTERFLIES

IDENTIFYING FEATURES OF BUTTERFLIES

- Two pairs of wings with scales
- Long antennae with 'club-shaped' end. No UK butterfly has feathery antennae
- Normally fold their wings vertically over their backs when at rest
- Often active during the day
- Long proboscis for accessing nectar
- Larvae feed on plants and many species have a specific foodplant.

Red Admiral

MOTHS

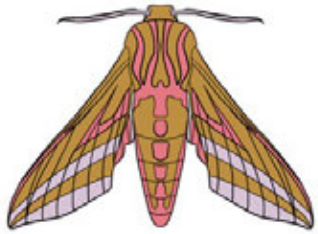
IDENTIFYING FEATURES OF MOTHS

- Two pairs of wings with scales
- Not all moths come out at night, some fly during the day
- Most moths have feathery or tapering antennae
- Most moths hold their wings horizontally when at rest (although quite a few Geometrids, such as the Thorns, hold them vertically or at an angle)
- Pollen baskets/brushes to collect pollen in females (queens and workers).

DIFFERENT TYPES OF MOTHS

- Depending on their family, moths come in all shapes and sizes.
- Moths are often split into macro and micro moths, although this definition is not based on size. It depends on evolutionary complexity: micro moths are the oldest part of the family tree, while macro moths evolved once flowering plants began to appear.

Six-spot Burnet



Elephant Hawk Moth

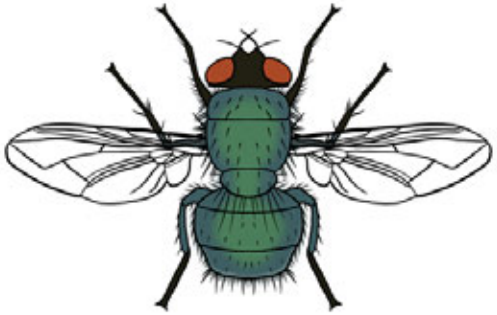
Jersey Tiger

IDENTIFYING ADULT POLLINATORS AT A GLANCE

FLIES

IDENTIFYING FEATURES OF FLIES

- Only have **one** pair of wings, the other pair has evolved into flight balancing organs called halteres. Other insects have **two** pairs of wings
- They have large eyes that take up most of their heads
- Antennae are usually a lot shorter than those of bees and wasps.



Greenbottle

FLIES (DIPTERA)

are split into two main groups, the Nematocera and the Brachycera.

- Nematocera have elongated bodies and often long, feathery antenna. These include midges, mosquitoes, and crane flies.
- Brachycera are more rotund in body shape and have short antennae. All the other flies fit into this group; from hoverflies to house flies, and blow flies to bee-flies, plus many more.

Hornet Hoverfly

HOVERFLIES

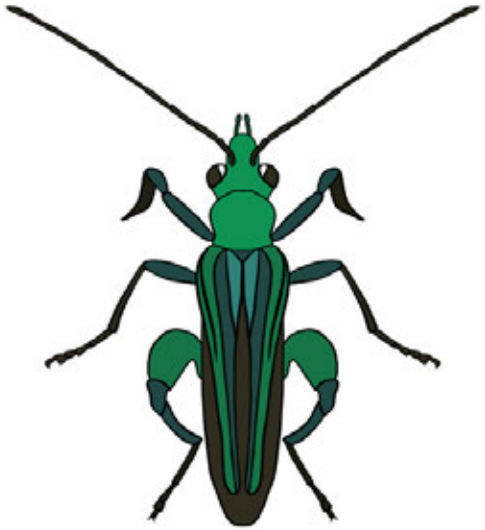
- Short antennae with three segments.
- Often mimic bees and wasps through their stripy colouration but also behaviour and sound.
- May be furry but are never bristly
- Wing venation is important for identification. They have a false vein *(vena spuria)* that runs through the wing which is unique to hoverflies.
- Important as pollinators but also some species are useful as predators of crop pests in their larval stage.

IDENTIFYING ADULT POLLINATORS AT A GLANCE

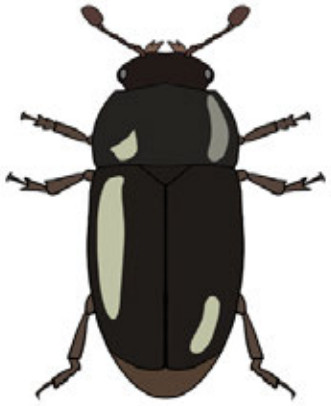
BEETLES

IDENTIFYING FEATURES OF BEETLES

- Two pairs of wings but the front wings are hardened into protective covers (elytra), which usually meet in a straight line down most of the back, making a T shape (as opposed to true bugs whose wing cases meet in an X or Y shape). The hindwings are folded up underneath
- Not usually very hairy
- They have biting mouthparts
- Probably the first insect pollinators but not generally the most efficient
- Some eat only pollen but for others it is part of a wide diet
- Beetle-pollinated flowers tend to be open and fragrant but also have to tolerate being chewed on by their visitors
- Important as pollinators because of their numbers and diversity.



Thick-legged Flower beetle



Pollen Beetle

POLLINATORS THROUGH THE YEAR

MARCH

Hairy-footed Flower Bee
Anthophora plumipes

It's fuzzy appearance often means it is confused for bumblebees, but Hairy-footed Flower Bees are one of the first solitary bees to emerge in the year.

Being a spring-emerging bee, some of their favourite flowers include Primrose *Primula vulgaris,* Comfrey *Symphytum* spp., Deadnettles *Lamium* spp., and Lungwort *Pulmonaria officinalis*. Make sure to have these and other early spring flowers in your garden if you wish to see these bees.

Red Wasp
Vespula rufa

Queens will be emerging in March to start setting up a nest. The Red Wasp build their nests underground, in dry, shaded areas close to the soil surface, or even just under a leaf litter or moss layer. The adult visits flowers such as Wild Parsnip *Pastinaca sativa* and Gorse *Ulex europaeus,* but their larvae are fed on insects and spiders which the adults capture for them.

Brimstone Butterfly
Gonepteryx rhamni

Brimstones are one of the few butterflies to overwinter as adults, but as a result they are one of the first butterflies you may see as spring arrives. Their larval foodplants are Buckthorn *Rhamnus cathartica* or Alder Buckthorn *Frangula alnus,* restricting the butterfly to areas where these trees occur. Its name comes from its bright yellow colour, said to resemble the sulphurous colour of brimstone.

Pollen beetles
***Meligethes* spp.**

As the name suggests, adults eat pollen, feeding on a variety of flowers including Brambles *Rubus* spp., Roses *Rosa* spp., Buttercups *Ranunculus* spp various flowers in the carrot family, and flowering hedgerows shrubs such as Hawthorn *Crataegus monogyna* in the spring. As well as adults actively consuming pollen, their mating and depositing of eggs on flowers (larvae eat pollen and flower reproductive structures) also helps to transfer pollen between flowers.

KEY DATES MARCH

3rd World Wildlife Day

BEES

Red-tailed Bumblebee

Early Bumblebee

BUTTERFLIES

Small Tortoiseshell

Red Admiral

MOTHS

Clouded Drab

Common Quaker

WASPS

Common Wasp

German Wasp

FLIES

Greenbottle

Yellow Dung Fly

BEETLES

7-spot Ladybird

2-spot Ladybird

WILDFLOWERS TO SEE:

Coltsfoot *Tussilago farfara,* Lesser Celandine *Ficaria verna,* Marsh Marigold *Caltha palustris,* Primrose *Primula vulgaris,* Cherry Plum *Prunus cerasifera,* Blackthorn *Prunus spinosa,* Goat Willow *Salix caprea,* Butterbur *Petasites hybridus,* Dandelion *Taraxacum* spp., Stinking Hellebore *Helleborus foetidus,* Lungwort *Pulmonaria officinalis*

APRIL

FLIES

There are plenty of unusual and specialist flies about in April:

Dark-edged Bee Fly
Bombylius major

This is the UK's largest Beefly which looks and sounds a bit like a Bumblebee, offering it protection from predators, despite it being harmless. One of the earliest pollinators to emerge in the year (April-May), it takes advantage of the spring flowers and often pollinates Primroses *Primula* spp. and Violets *Viola* spp. whilst feeding on the nectar with its long proboscis.

St Mark's Fly
Bibio marci

A shiny black fly named as it supposedly starts to appear on St Mark's Day, 25th April. It is also known as the Hawthorn Fly, for its love of the flowers of Hawthorn *Crataegus monogyna*.

Narcissus Bulb Fly
Merodon equestris

Another Bumblebee mimic. Adults feed on nectar and pollen but eggs are laid on the bulbs of daffodils or bluebells and larvae burrow through the bulb, often destroying the bulb through eating it.

Thick-legged Flower Beetle
Oedomera nobilis

This green metallic beetle is a great pollinator of flowers on its pursuit of nectar and pollen to consume. Therefore, it is commonly found in most situations where flowers occur, from flower meadows to reclaimed brownfield sites. The name comes from the distinctive males, which unlike any other beetle in the False Oil Beetle family, have swollen back legs.

Cuckooflower
Cardamine pratensis

A great spring flower that both Orange-tip and Green-veined White Butterfly larvae eat. It grows best in damp meadows but can be seen on road verges. Orange Tips and Green-veined Whites can look very similar. Orange-tip males have (as the name suggests) orange wingtips, with black wingtips on females. The underwings for both sexes are mottled green. The Green-veined White lacks the wingtip colour and has distinctive green veins on the underwing. *Photo: Orange Tip.*

Fringe-horned Mason Bee
Osmia pilicornis

A very rare solitary bee in the UK, Kent is one of the few places to see it. It is associated with open-structured woodland, but due to changes in management, the species numbers have dropped drastically. To support these bees, certain woodland features such as clearings must be created and managed, allowing flowers to come through. Managing the woodland like this supports other rare pollinators, such as Pearl-bordered Fritillaries.

KEY DATES APRIL

19th Primrose Day
22nd World Earth Day
24th International Day of the Dandelion

BEES

Red Mason Bee

Grey-backed Mining Bee

BUTTERFLIES

Large White

Holly Blue

MOTHS

Garden Carpet

Early Thorn

WASPS

Argogorytes mystaceus

Median Wasp

FLIES

Narcissus Fly

Dark-edged Beefly

BEETLES

Hawthorn Leaf Beetle

Common Malachite Beetle

WILDFLOWERS TO SEE:

Bugle *Ajuga reptans,* Violets *Viola* spp., Forget-me-not *Myosotis arvensis,* Early Purple Orchid *Orchis mascula,* Fritillaries *Fritillaria* spp., Wild Strawberry *Fragaria vesca,* Wood Anemone *Anemone nemorosa,* Cowslip *Primula veris,* Dove's Foot Cranesbill *Geranium molle*

POLLINATORS THROUGH THE YEAR

MAY

THE OWL AND THE PUSSY CAT

If you go down to the woods today, you may find a strange green, fern-like flower poking up in the undergrowth. This is Lords and Ladies *Arum maculatum,* although the old Kentish name for it is just as strange as its appearance, "Kitty-come-down-the-lane-jump-up-and-kiss-me"! And these kitties are involved with an owl, small Owl-midges (Psychodidae) to be exact. The flower attracts the midges into its base, where the reproductive parts are located, with a faecal odour and warmth (the flower can be up to 15°C higher than ambient temperature). The midges are then trapped under a ring of hairs which dusts them with pollen as they escape.

Shrill Carder Bumblebee

Bombus sylvarum

These bees are called Shrill for the high-pitched buzz that they produce in flight and are one of the latest bumblebees in the season to emerge from hibernation. Now the rarest bumblebee in southern Britain, it was widespread across southern England and Wales until 30 years ago, but is now only found in 5 small and separated areas; south Wales, the Pembrokeshire coast, Somerset and the Thames estuary. They have been a focus of conservation projects and currently have small stable populations and sites in north Kent – on areas with flower-rich grassland for feeding and tussocky, thick grassland for nesting.

Jewel Wasps -

Family Chrysididae

This metallic group of solitary wasps, including ruby-tailed wasps, are beautiful insects that glitter in the sunlight. They can be seen in sand quarries and rocky areas, looking for the nests of other solitary bees and wasps in which to lay their eggs. The adults are good pollinators of many flowers including fruit trees.

Hawk-moths

Family Sphingidae

These giant moths are always a firm family favourite at any moth night. But not all are great pollinators. Many do not have mouth parts as adults, such as the Poplar Hawk-moth *Laothoe populi.* But those that do feed, such as the vibrantly coloured Elephant Hawk-moth *Deilephila elpenor,* are more likely to be pollinating flowers. Although generally a migrant visitor, the beautiful Hummingbird Hawk-moth *Macroglossum stellatarum,* with its long proboscis and ability to 'hover' whilst feeding, has been reported to have bred in Kent. *Photo: Poplar Hawk-moth.*

KEY DATES MAY

Whole month No Mow May
8th Garden Day
20th World Bee Day
22nd International Day for Biological Diversity
Last week of May National Children's Gardening Week
Third Friday Endangered Species Day

BEES

Wool Carder Bee

Long-horned Bee

BUTTERFLIES

Common Blue

Green Hairstreak

MOTHS

The Cinnabar

Speckled Yellow

WASPS

Spiny Mason Wasp

Black-banded Spider Wasp

FLIES

Batman Hoverfly

Broad Centurion

BEETLES

Rose Chafer

Sulphur Beetle

WILDFLOWERS TO SEE:

Cow Parsley *Anthriscus sylvestris*, Ox-eye Daisy *Leucanthemum vulgare*, Buttercups *Ranunculus* spp., Bluebell *Hyacinthoides non-scripta*, Garlic Mustard *Alliaria petiolata*, Wild Garlic *Allium ursinum*, Common Mouse Ear *Cerastium fontanum*, Ground Ivy *Glechoma hederacea*, Ribwort Plantain *Plantago lanceolata*, Borage *Borago officinalis*

POLLINATORS THROUGH THE YEAR

JUNE

MAGNIFICENT MOTHS CONSERVATION EFFORTS

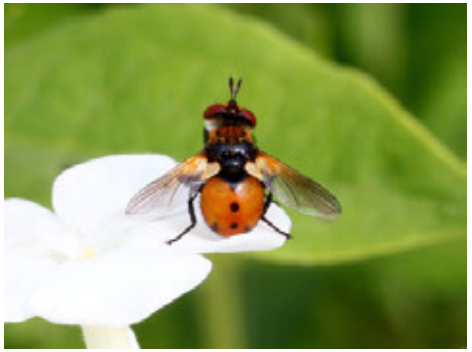
The Fiery Clearwing *Pyropteron chrysidiformis* and Black-veined moth *Siona lineata* are both summer moths that have benefitted from the conservation efforts of Butterfly Conservation's Magnificent Moths project. Whilst Kent is one of the few places you can see these moths, they are so rare that in order to search for them you need a special licence. Black-veined moths look like a 'traditional' moth, but the clearwings are a very distinctive moth group, with long slender bodies and, as the name suggests, transparent wings!
Photo: Black-veined Moth.

Heath Fritillary
Melitaea athalia

Often nicknamed "Woodman's Follower" for the way it followed woodland coppicing, its numbers have suffered due to changes to woodland management that no longer support its larval food plant, Common Cow Wheat *Melampyrum pratense*. The Blean Woods in Kent is one of the few places in the UK this butterfly can now be seen, and the population is monitored closely. The Kent population of this beautiful butterfly, although isolated from other populations, has had several successful breeding seasons in the last few years and is one of the target species for nationally publicised and extensive conservation efforts in areas of the Blean complex.

Noble Chafer
Gnorimus nobilis

This rare, metallic green beetle is found in traditional orchards, of which there are very few left in the country, so their populations are very isolated and fragile. Kent is very lucky to have some of the remaining populations.They lay their eggs in decaying fruit trees and can take 3 years to develop from larvae into adult beetles. Look out for the adults from June-August where they will be feeding on the pollen of umbellifers and elderflowers. There is another chafer beetle which looks similar, the Rose Chafer *Cetonia aurata*. To tell the difference, look at the wing cases; for Noble Chafers, the cases are wrinkled, whereas the Rose Chafer has smooth wing cases.



Ladybird Fly
Gymnosoma rotundatum

Not only do these flies stand out for their red/orange abdomen with black spots, making it resemble a Ladybird, the abdomen is almost completely spherical which is very distinctive. The adult flies feed on nectar, but the larvae are parasitic. Adults target and lay eggs on Shieldbugs, the eggs hatch and bore into the shield bug to feed on the live host, then bore their way out when they are ready to pupate.

KEY DATES JUNE

Whole month 30 Days Wild
Whole month Let June Bloom
5th World Environment Day

BEES

Leafcutter Bee

Southern Cuckoo Bumblebee

BUTTERFLIES

Marbled White

Meadow Brown

MOTHS

Six-spot burnet

Fiery Clearwing

WASPS

Black slip wasp

Red-banded Sand Wasp

FLIES

Snout Fly

Volucella bombylans

BEETLES

Red Longhorn Beetle

Common Red Soldier Beetle

WILDFLOWERS TO SEE:

Bird's Foot Trefoil *Lotus corniculatus,* Viper's Bugloss *Echium vulgare,* Bramble *Rubus fruticosus,* Honeysuckle *Lonicera periclymenum,* Red Clover *Trifolium pratense,* Wild Carrot *Daucus carota,* Foxglove *Digitalis purpurea,* Yellow Archangel *Lamium galeobdolon,* Poppies *Papaver* spp., Selfheal *Prunella vulgaris*

POLLINATORS THROUGH THE YEAR

JULY

Kent Rarities - *Straw Belle and Sussex Emerald*

The Straw Belle moth *Aspitates gilvaria* is found on the chalk habitats of the dry, dead grasses they lay their eggs on. Once hatched, its larvae feed on many foodplants, which include Yarrow *Achillea millefolium*, Wild Thyme *Thymus serpyllum*, and Black Medick *Medicago lupulina* to name a few. The name likely comes from its straw-coloured wings.

Found on the coastal shingle close to Dungeness, the Sussex Emerald *Thalera fimbrialis* has recently also colonised a few other sites due to conservation works. It is similar in appearance to the Common Emerald *Hemithea aestivaria,* but the Sussex Emerald has a red and white chequering along the wing fringe that the Common Emerald lacks. *Photo: Sussex Emerald.*

Wasp Beetle *Clytus arietis*

You may think that this is a wasp from its black and yellow stripes and the way it flies in a jerking fashion. It is in fact a beetle, using the looks and behaviour of a wasp to protect itself from predation. It is completely harmless though, and at rest you can see that the hind wings are hidden beneath the elytra. Wasp beetles belong to the Longhorn beetle family Cerambycidae. Other black and yellow Longhorn beetles have long antennae whereas in this species, they are short. Their larvae eat deadwood, but adults will eat pollen.

The Woodland Purples - *Purple Emperor and Purple Hairstreak*

Both the Purple Emperor *Apatura iris* and Purple Hairstreak *Favonius quercus* butterflies rely on trees for their lifecycles. Purple Hairstreaks are more common as they rely on oak trees, and a single tree can support a whole colony. In contrast, Purple Emperors are severely restricted to a handful of large woodlands where Goat Willow *Salix caprea* and other willow species, the larval foodplant, can be found. *Photo: Purple Hairstreak*

Spotted Longhorn Beetle *Beetle Rutpela maculata*

Another Longhorn beetle wasp mimic, this species has more copper and black colouring with incomplete black bands at the thorax. The adult has a short life span of 2-4 weeks, but in that time, they can be easily seen due to their size, feeding on nectar from Hogweed *Heracleum sphondylium*, Cow Parsley *anthriscus sylvestris* and other white umbellifers.

BEE HUNTERS

Some adult solitary wasps might feed on nectar but their larvae have a taste for bees. Adult Beewolves *Philanthus triangulum* hunt mainly honeybees, and the Ornate-tailed Digger Wasp, *Cerceris rybyensis* specialise in catching solitary bees. These captured bees are then buried in the sandy nest holes along with the wasp's eggs, which hatch into larvae and then begin to eat the bees… usually alive!

KEY DATES JULY

Bees Needs Week
First Sat National Meadows Day
10th Don't Step on A Bee Day
28th World Nature Conservation Day
Mid Jul - Early Aug Big Butterfly Count

BEES

Common Furrow Bee

Tree Bumblebee

BUTTERFLIES

Gatekeeper

Ringlet

MOTHS

Ruby Tiger

Oak Eggar

WASPS

Digger Wasp

Ancistrocerus trifasciatus

FLIES

Noon Fly

Thick-headed Fly

BEETLES

Spotted Longhorn Beetle

Leaf Beetle

WILDFLOWERS TO SEE:

Meadowsweet *Filipendula ulmaria,* Tufted Vetch *Vicia cracca*, Teasel *Dipsacus fullonum,* Rosebay Willowherb *Chamaenerion angustifolium,* Fennel *Foeniculum vulgare,* Common Mallow *Malva sylvestris,* Bedstraws *Gallium* spp., Field Scabious *Knautia arvensis,* Perforate St John's Wort *Hypericum perforatum,* Comfrey *Symphytum officinale*

POLLINATORS THROUGH THE YEAR

AUGUST

Sea Aster Mining Bee
Colletes halophilus

A rare but beautiful solitary bee, Kent is one of the few places to find this species. It has reddish brown hairs on its thorax and very striking pale white/yellow bands on its abdomen. It is restricted to a handful of saltmarshes or coastal habitats where it collects pollen mainly from its namesake, the Sea Aster *Tripolium pannonicum*. It creates nest burrows in sand banks and salt marshes where there is little vegetation and is well-adapted to living in the flood-zone, withstanding daily inundations with waterproof

'cellophane'-lined egg cells that the female makes by chewing plant material. However, this species is very vulnerable to increased development pressure and significantly, rising sea levels from climate change.

Common Red Soldier Beetle
Rhagonycha fulva

Despite its bright red appearance giving it the nickname "bloodsucker", these beetles are completely harmless to humans. Often found on open-structured flowers like. Cow Parsley *Anthriscus sylvestris* and Wild Carrot *Daucus carota,* these beetles act as pollinators whilst on the hunt for their main prey – aphids. They can also eat pollen and nectar if times are getting tough.

EUROPEAN HORNET VS HORNET HOVERFLY

Despite being bigger than a wasp, the European Hornet *Vespa crabro* is less aggressive and will only sting in defence if its nest is threatened. Hornets are important pollinators, the adults having a high-sugar diet including nectar from flowers including fruit trees. Then there is the Hornet Hoverfly *Volucella zonaria*. The size and markings of these harmless insects may make you think it was a Hornet, but you can distinguish the hoverfly from a real hornet by their short antennae, lack of a clear 'waist' and single pair of wings.

The Chalk Grassland Blues
Chalk Hill Blue and Adonis Blue

The chalk landscapes of Kent are a valuable habitat, supporting many specialist flowers and insects. Two examples are the beautiful blue butterfly species, the Chalk Hill Blue *Polyommatus coridon* and the Adonis Blue *Polyommatus bellargus*. These two butterflies are only found on chalk downs where their larval foodplants grow, Horseshoe Vetch *Hippocrepis comosa*. Having a sole food plant is a risky strategy, because if the food plant disappears, so does the butterfly and population can become isolated. Fortunately, across Kent many chalk grassland nature reserves and management projects have been working to preserve and link up these populations, hopefully ensuring their survival for years to come.
Photo: Chalk Hill Blue.

KEY DATES AUGUST

Second full week National Allotment Week

BEES

Garden Bumblebee

Brown-banded Carder Bumblebe

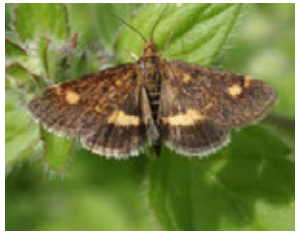
BUTTERFLIES

Silver-washed Fritillary

Large Skipper

MOTHS

Dusky Sallow



Mint Moth

WASPS

Crabro cribarius

Astata boops

FLIES

Muscid Fly

Pellucid Hoverfly

BEETLES

Anaspis maculata

Welsh Chafer

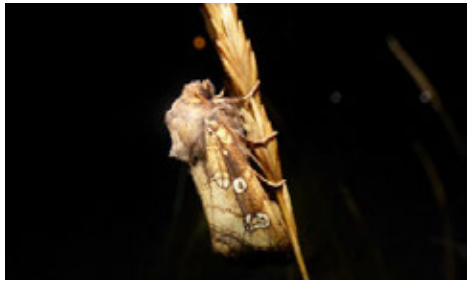
WILDFLOWERS TO SEE:

Great Mullein *Verbascum thapsus*, Heather *Calluna vulgaris,* Hemp Agrimony *Eupatorium cannabinum,* Black Knapweed *Centaurea nigra,* Wild Marjoram *Origanum vulgare,* Common Fleabane *Pulicaria dysenterica*, Water Mint *Mentha aquatica,* Red Bartsia *Odontites verna,* Tansy *Tanacetum vulgare,* Yarrow Achillea *millefolium.*

SEPTEMBER

Fisher's Estuarine Moth
Gortyna borelii

One of the UK's rarest moths, the Fisher's Estuarine Moth is severely restricted, being found only on coastal sites in east Essex and at a handful of sites in Kent. This is due to the larval foodplant, Hog's Fennel *Peucedanum palustre,* being only found on a few coastal sites. The larvae and the foodplant are at risk from poor habitat management and sea-levels rising, which cause the habitat to be flooded and the larvae drown. However, work is continuing to save these moths by establishing populations further away from the coast to save them from flooding.



Ivy Bee
Colletes hederae

One of the last solitary bee species to be seen in the year, Ivy Bees get their name from the flowers that they visit most commonly this time of year. These bees were first found in the UK in Dorset in 2001 and have rapidly spread all over the south of England. They often form large aggregations of nests when they find a good site.

CATERPILLAR SIGHTINGS

You may start to notice more caterpillars in September as they search for more food and a place to spend the winter. Caterpillars are the larval forms of butterflies and moths. Their job is to eat as much as possible to facilitate the metamorphosis process, where the caterpillar transforms into a pupa and then the adult butterfly. Most butterfly species will have laid their eggs earlier in the year, during the spring and summer. The eggs hatched and the caterpillars have eaten their chosen food plants to store energy up for pupation and to last them over winter. Caterpillars you may see more frequently this time of year include the Elephant Hawk-moth *Deilephila elpenor,* the Cinnabar moth *Tyria jacobaeae,* the Large White butterfly *Pieris brassicae* and the Comma butterfly *Polygonia c-album.* *Photo: Elephant Hawk Moth caterpillar.*

WHY ARE WE BOTHERED MORE BY WASPS IN AUTUMN?

As the summer ends, many social wasp nests are disbanded as the queens and males have emerged and left the nest. With nothing left to do, the workers who normally capture other insects to feed the larvae then turn their attention to feeding themselves for the remainder of their lives. The workers cannot eat insects as their waist is too small to allow digestion, so instead they prefer nectar, which makes them great pollinators. However, it's not just nectar they like, they will have a go at anything sugary which means they are more likely to bother you for your juice drink, or your sweet fruit, hence why you are more likely to encounter wasps at this time of year!

KEY DATES SEPTEMBER

4th National Wildlife Day
From 23rd Seed Gathering Season
Whole Month Organic September - Soil Association

BEES

Forest Cuckoo Bumblebee

Ivy Bee

BUTTERFLIES

Wall

Speckled Wood

MOTHS

Marsh Mallow Moth

Lunar Underwing

WASPS

Digger Wasp

Beewolf

FLIES

Syrphus ribesii

Chrysotoxum bicinctum

BEETLES

Brown Chafer

Cryptocephalus hypochaeridis

WILDFLOWERS TO SEE:

Thistles *Cirsium* spp., Burdock *Arctium minus,* Mallows *Malva* spp., Autumn Gentian *Gentianella amarella,* Corn Marigold *Glebionis segetum,* Devil's-bit Scabious *Succisa pratensis,* Fleabane *Pulicaria dysenterica,* Herb-Robert *Geranium robertianum,* Ivy *Hedera helix.*

POLLINATORS THROUGH THE YEAR

OCTOBER

Merveille du Jour
Griposia aprilina

The name for this gorgeous moth translates as 'Marvel of the Day' in French, and what a marvel it is. The intricate green and white marbling with frayed edges helps the moth blend in beautifully into a lichen covered tree. For many, the arrival of this moth signals the start of autumn.

Marmalade Hoverflies
Episyrphus balteatus
and Other Hoverflies

A few hoverfly species may be hanging on in October and seen flitting about the flowers on sunny days. Marmalade hoverflies are one of the most common hoverfly species, and quite easy to identify from their small marmalade-orange and black banded bodies. They feed on nectar from a range of flowers, including Ragwort *Senecio jacobaea* Cow Parsley *Anthriscus sylvestris* and other open-structured flowers that they can perch on. If you are a gardener, then encouraging these hoverflies into your garden is a must as the larvae eat unwanted pests such as aphids.

BUMBLEBEES THAT MAY STILL BE SEEN

Making the most of bright autumnal days are the queens of several bumblebee species, including Red-tailed *Bombus lapidarius,* Common Carder *Bombus pascuorum,* and Buff-tailed *Bombus terrestris.* They will be stocking up on nectar to fuel their bodies overwinter, ready for the spring when they can find a nest site and start the next colony. Workers of bumblebee species including the rarer Ruderal *Bombus ruderatus* and Shrill Carder *Bombus sylvarum* may remain active into October, especially if the weather stays warm and dry, and there is enough flower forage available.
Photo: Peacock hibernating.

OVERWINTERING ADULT BUTTERFLIES

To beat the winter wet and cold, some adult butterflies enter a state of dormancy over winter, ready to mate as soon as the temperature is warm and constant enough in the spring. Butterflies that do this include the Peacock *Aglais io*, Comma *Polygonia c-album,* Brimstone *Gonepteryx rhamni,* Small Tortoiseshell *Aglais urticae* and Red Admiral *Vanessa atalanta.* Peacock and Small Tortoiseshell are the most likely to come into a building, which can be an issue when we turn on the heating and increase the temperature. To help any butterflies you find awake in your house, pop it in a cardboard box and relocate it to your shed or somewhere cool and dry, ready to set it free in the spring.

KEY DATES OCTOBER

Whole Month World Animal Month
4th World Animal Day

BEES

Ruderal Bumblebee

Common Carder Bumblebee

BUTTERFLIES

Small Copper

Painted Lady

MOTHS

Barred Sallow

Black Rustic

WASPS

European Hornet

Ruby-tailed Wasp

FLIES

Sunfly

Hornet Mimic Hoverfly

BEETLES

Notoxus monoceros

24-spot Ladybird

WILDFLOWERS TO SEE:

Dandelion *Taraxacum* spp., Harebell *Campanula rotundifolia,* Greater Plantain *Plantago major,* Common Groundsel *Senecio vulgaris,* Hedgerow Cranesbill *Geranium pyrenaicum,* Yellow Toadflax *Linaria vulgaris,* Thyme-leaved Speedwell *Veronica serpyllifolia,* White Campion *Silene latifolia,* Autumn Hawkbit *Scorzoneroides autumnalis,* Red Campion *Silene dioica.*

WINTER - NOVEMBER TO FEBRUARY

SETTLING DOWN TO OVERWINTER

Whether as an egg, larva, pupa or adult, pollinators settle down for the winter to miss the cold weather and lack of flowers. Cracks in bark, leaf litter, old flower stems, long grass or even dark, dry buildings such as sheds are all places where you may find a pollinator during winter. If you do come across one, leave it be so it can stay asleep and not waste any of its energy reserves.

To help pollinators further, leave your garden undisturbed throughout winter, don't remove any leaves, keep swathes of flower stems and areas of grass long and uncut, and have a few winter flowering plants ready should any pollinator wake up naturally on a warmer day.

Photo: Satellite.

WINTER MOTHS

There are several moths that appear in the winter to mate and lay their eggs, such as the aptly named Winter Moth *Operophtera brumata* and the Satellite *Eupsilia transversa*. Whilst it is unlikely that these moths specifically visit flowers for nectar, as there will not be many flowers out at this time, they may be accidental pollinators. As they have fluffy bodies for insulation, they may pick up pollen from any flowers in bloom when visiting foodplants to lay their eggs.

VALUE OF WINTER FLOWERING PLANTS

As a result of global warming, we are getting warmer, wetter winters, which is likely to interfere with the normal hibernating period of queen bumblebees and other adult pollinators. Indeed, in milder winters the Buff-tailed bumblebee queens and workers can remain active and have been known to have several broods throughout the year, if enough forage is available. Having winter flowers with good pollen and nectar sources helps any emerging pollinator on warmer days to recover the energy they are using by being awake and last until spring and continuous warmer days and nectar supplies arrive.

Photo: Queen wasps hibernating.

KEY DATES WINTER - NOVEMBER TO FEBRUARY

KEY DATES NOV
Last week Tree Week

KEY DATES DEC
4th World Wildlife Conservation Day

5th World Soil Day
21st Winter Solstice
25th-5th Jan
12 Days Wild

KEY DATES JAN
1-4th Jan New Year Plant Hunt

KEY DATES FEB
2nd Candlemas - Snowdrops
21st Celandine Day

BEES

White-tailed Bumblebee

Buff-tailed Bumblebee

BUTTERFLIES

Peacock

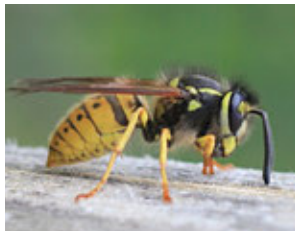
Comma

MOTHS

Dark Chestnut

Silver Y

WASPS



German Wasp

Common Wasp

FLIES

Drone Fly

Marmalade Hoverfly

WILDFLOWERS TO SEE:

Gorse *Ulex europeus,* Common Groundsel *Senecio vulgaris,* Red Deadnettle *Lamium purpureum,* White Deadnettle *Lamium album*

Jan-Feb Lesser Celandine *Ranunculus ficaria,* Snowdrops *Galanthus nivalis,* Winter Aconite *Eranthis hyemalis,* Stinking Hellebore *Helleborus foetidus,* Hazel *Corylus avellana.*

FLIGHT PERIODS

Here are the flight periods for the adults of some of Kent's pollinators. Only butterflies have a complete species list as the other groups are too numerous to include every species in Kent. **RED = RARE.**

BEES

Common Name	Scientific Name	F	M	A	M	J	J	A	S	O	N	Habitat
Buff-tailed Bumblebee	*Bombus terrestris*											Wide range of habitats
White-tailed Bumblebee	*Bombus lucorum*											Wide range of habitats
Common Carder Bumblebee	*Bombus pascuorum*											Wide range of habitats
Common Furrow Bee	*Lasioglossum calceatum*											Most habitats with open, dry areas
Garden Bumblebee	*Bombus hortorum*											Wide range of habitats
Red-tailed Bumblebee	*Bombus lapidarius*											Wide range of habitats
Forest Cuckoo Bumblebee	*Bombus sylvestris*											Wide range of habitats
Tree Bumblebee	*Bombus hypnorum*											Open woodland & gardens
Ashy Mining Bee	*Andrena cineraria*											Open sunny places
Early Bumblebee	*Bombus pratorum*											Gardens & woodland habitats
Tawny Mining Bee	*Andrena fulva*											Open grasslands
Grey-Backed Mining Bee	*Andrena vaga*											Light soils where willows grow
Hairy-footed Flower Bee	*Anthophora plumipes*											Gardens, open woodland & coastal sites
Orange-legged Furrow Bee	*Halictus rubicundus*											Wide range of habitats
Ruderal Bumblebee	*Bombus ruderatus*											Flower-rich habitats
Red-Shanked Carder Bumblebee	*Bombus ruderarius*											Habitats supporting Fabaceae & Lamiaceae flowers
Southern Cuckoo Bumblebee	*Bombus vestalis*											Wide range of habitats provided where host lives
Fringe-horned Mason Bee	*Osmia pilicornis*											Broadleaved Woodland with regular coppicing
Red Mason Bee	*Osmia bicornis*											Wide range of habitats
Brown-banded Carder Bumblebee	*Bombus humilis*											Open flower-rich grasslands
Common Yellow Face Bee	*Hylaeus communis*											Open woodland, grassland & coastal sites
Moss Carder Bumblebee	*Bombus muscorum*											Open, flower-rich grassland
Shrill Carder Bumblebee	*Bombus sylvarum*											Tussocky flower-rich grassland on coastal & brownfield sites
Red-tailed Cuckoo Bumblebee	*Bombus rupestris*											Gardens & unimproved grasslands
Maidstone Mining Bee	*Andrena polita*											Chalk grassland
Wool Carder Bee	*Anthidium manicatum*											Gardens, open broadleaved woodland, chalk grassland, coastal dunes & landslips
Long-Horned Bee	*Eucera longicornis*											Coastal grasslands, open rides in woodland & heathlands
Leafcutter Bee	*Megachile willoughbiella*											Gardens & brownfield
Ivy Mining Bee	*Colletes hederae*											Wherever ivy pollen occurs
Sea Aster Bee	*Colletes halophilus*											Coastal habitats

WASPS

Common Name	Scientific Name	M	A	M	J	J	A	S	O	N	Habitat
German Wasp	*Vespula germanica*										Various habitats
Common Wasp	*Vespula vulgaris*										Various habitats
Black-banded spider wasp	*Anoplius viaticus*										Sandy soils supporting heaths, dunes & open, heathy woodland
Red Wasp	*Vespula rufa*										Open habitats, e.g., open woodlands, moorland & hedge banks
European Hornet	*Vespa crabro*										Lowland habitats, mainly ancient deciduous woodland
Median Wasp	*Dolichovespula media*										Lowland habitats, hedges, sometimes gardens
	Argogorytes mystaceus										Deciduous woodland & edges, sunny glades with tall, rank vegetation
Ruby-tailed wasp	*Chrysis ignita*										Walls, quarry & bare cliff faces
Tree Wasp	*Dolichovespula sylvestris*										Varied, common in urban areas, particularly gardens
	Ancistrocerus trifasciatus										Associated with marshy places
	Trichrysis cyanea										Gardens, woodland edges & rides
	Pseudomalus auratus										Open habitats of its stem- & wood-nesting hosts
Eastern Sand Wasp	*Podalonia affinis*										Coastal dunes
	Passaloecus singularis										Gardens & hedgerows
	Spilomena troglodytes										Open habitats where deadwood is available for nesting
	Psenulus pallipes										Open habitats wherever suitable nesting sites are available, including gardens
	Symmorphus gracilis										Damp places near streams & ditches, can include gardens
Spiny Mason Wasp	*Odynerus spinipes*										Open areas with banks of exposed sand or clay
Black Slip wasp	*Pimpla rufipes*										Hedgerows & well vegetated areas
Digger Wasp	*Ectemnius cavifrons*										Open habitats where deadwood is available for nesting
Digger wasp	*Cerceris rybyensis*										Sandy soils & chalk grassland
Red-banded Sand Wasp	*Ammophila sabulosa*										Heathland, dunes & other coastal areas
	Crabro cribrarius										Lowland heaths, coastal dunes, chalk grassland & open woodland
	Symmorphus bifasciatus										Damp places near streams & ditches, can include gardens
	Ancistrocerus gazella										Varied, wherever there is deadwood
	Cerceris arenaria										Open sandy habitats; heaths and commons, dunes & landslips
	Astata boops										Sandy habitats, such as inland heaths & coastal dunes
	Gorytes laticinctus										Heathland, scrub, coastal dunes, coastal landslips, soft rock cliffs, quarries & occasionally gardens
	Mimesa equestris										Open sandy habitats, sand pits
Four-banded Weevil Wasp	*Cerceris quadracincta*										Open sandy areas
Bee Wolf	*Philanthus triangulum*										Sand dunes & lowland heaths

BUTTERFLIES

Common Name	Scientific Name	J	F	M	A	M	J	J	A	S	O	N	D	Habitat
Peacock	*Aglais io*													Wide range of habitats
Small Tortoiseshell	*Aglais urticae*													Wide range of habitats
Comma	*Polygonia c-album*													Flower-rich habitats
Brimstone	*Gonepteryx rhamni*													Scrub and woodland rides
Red Admiral	*Vanessa atalanta*													Wide range of habitats
Speckled Wood	*Pararge aegeria*													Woodland rides and glades
Large White	*Pieris brassicae*													Variety of urban habitats
Small White	*Pieris rapae*													Variety of urban habitats
Green-veined White	*Pieris napi*													Damp habitats
Painted Lady	*Vanessa cardui*													Wide range of habitats
Orange-tip	*Anthocharis cardamines*													Damp habitats
Green Hairstreak	*Callophrys rubi*													Chalk grassland, woodland rides, heathland, bogs, scrub/grassland
Holly Blue	*Celastrina argiolus*													Gardens & parks, hedgerows, woodland rides
Clouded Yellow	*Colias croceus*													Flowery, grassy habitats
Small Copper	*Lycaena phlaeas*													Unimproved chalk grasslands, heathland, woodland clearings
Common Blue	*Polyommatus icarus*													Downland, coastal dunes, road verges & woodland clearings
Wall	*Lasiommata megera*													Short, open grassland
Small Heath	*Coenonympha pamphilus*													Heathland, downland, coastal dunes, road verges
Dingy Skipper	*Erynnis tages*													Chalk downland, woodland rides, coast habitats
Brown Argus	*Aricia agestis*													Chalk grassland
Adonis Blue	*Polyommatus bellargus*													Chalk grassland with south facing slopes
Small Blue	*Cupido minimus*													Where kidney vetch occurs
Grizzled Skipper	*Pyrgus malvae*													Woodland rides, unimproved grasslands
Duke of Burgundy	*Hamearis lucina*													Chalk grassland with scrub, clearings in ancient woodland
Meadow Brown	*Maniola jurtina*													Heathland, downland, coastal dunes, road verges
Small Skipper	*Thymelicus sylvestris*													Unimproved open grass areas
Large Skipper	*Ochlodes sylvanus*													Tall, damp grass areas e.g., woodland rides, hedgerows
Marbled White	*Melanargia galathea*													Unimproved tall grassland e.g., chalk grassland
Dark Green Fritillary	*Argynnis aglaja*													Flowery, grassy habitats
White Admiral	*Limenitis camilla*													Shady woodland rides
Heath Fritillary	*Melitaea athalia*													Coppiced woodland on acidic soils where Common Cow-wheat grows
Brown Hairstreak	*Thecla betulae*													Hedgerows and woodland with Blackthorn

BUTTERFLIES

Common Name	Scientific Name	J	F	M	A	M	J	J	A	S	O	N	D	Habitat
Essex Skipper	*Thymelicus lineola*													Tall, dry grasslands
Ringlet	*Aphantopus hyperantus*													Woodland rides & glades, damp grassland
Gatekeeper	*Pyronia tithonus*													Tall grasses close to trees/scrub
Grayling	*Hipparchia semele*													Coastal habitats, dry heathland, chalk grassland
Silver-washed Fritillary	*Argynnis paphia*													Woodland rides & glades
Purple Emperor	*Apatura iris*													Woodland or dense scrub with good supply of Willow
Purple Hairstreak	*Favonius quercus*													Tops of oak trees in woodlands, hedgerows, and parks;
White-letter Hairstreak	*Satyrium w-album*													Where Elms occur; hedgerows, mixed scrub, woodland rides
Chalk Hill Blue	*Polyommatus coridon*													Chalk grassland, where Horseshoe Vetch occurs
Silver-spotted Skipper	*Hesperia comma*													Unimproved chalk grasslands

MOTHS

Common Name	Scientific Name	J	F	M	A	M	J	J	A	S	O	N	D	Habitat
The Satellite	*Eupsilia transversa*													Broad-leaved woodland & gardens
Grey Shoulder-knot	*Lithophane ornitopus*													Woodland
Hebrew Character	*Orthosia gothica*													Most habitats
Clouded Drab	*Orthosia incerta*													Wherever oaks trees occur
Common Quaker	*Orthosia cerasi*													Low-land woodland and gardens
Brimstone Moth	*Opisthograptis luteolata*													Wide range of habitats
Garden Carpet	*Xanthorhoe fluctuata*													Particularly suburban habitats
Early Thorn	*Selenia dentaria*													Woodland, hedgerows & gardens
White-spotted Sable	*Anania funebris*													Woods where goldenrod occurs
Silver Y	*Autographa gamma*													Migrant species, found across Kent
Angle Shades	*Phlogophora meticulosa*													Gardens, hedgerow, fens & woodland
Setaceous Hebrew Character	*Xestia c-nigrum*													Gardens, woodland, heathland, and marshes
Humming-bird Hawkmoth	*Macroglossum stellatarum*													Wildflower meadows & chalk grassland. Adults feed in gardens.
Elephant Hawkmoth	*Deilephila elpenor*													Gardens, woodland & downland
Mint Moth	*Pyrausta aurata*													Chalk downland & gardens

MOTHS

Common Name	Scientific Name	J	F	M	A	M	J	J	A	S	O	N	D	Habitat
Heart and Dart	*Agrotis exclamationis*													All habitats
White Ermine	*Spilosoma lubricipeda*													Wide range of habitats
The Cinnabar	*Tyria jacobaeae*													Grassland, sand-dunes & gardens
Tawny Shears	*Hadena perplexa*													Dry grassy & stony habitats
Speckled Yellow	*Pseudopanthera macularia*													Woodland & scrubland
Light Emerald	*Campaea margaritaria*													Wherever deciduous trees occur
Dark Arches	*Apamea monoglypha*													Wide variety of grassy habitats
Pine Hawkmoth	*Sphinx pinastri*													Coniferous woodland
Six-Spot Burnet	*Zygaena filipendulae*													Meadows, woodland glades, sea-cliffs
Bright Wave	*Idaea ochrata*													Wildflower meadows & dune grassland
Privet Hawkmoth	*Sphinx ligustri*													Woodland and suburban habitats
Fiery Clearwing	*Pyropteron chrysidiformis*													Shingle, clifftops, neutral grasslands, glades, brownfields & meadows
Black-veined Moth	*Siona lineata*													Rough downland & grass pastures
Large Yellow Underwing	*Noctua pronuba*													Grassland, gardens, woodland & moorland
Dusky Sallow	*Eremobia ochroleuca*													Dry, chalky or stony habitats
Straw Belle	*Aspitates gilvaria*													Chalk downland
The Magpie	*Abraxas grossulariata*													Heather moorland, gardens & woods
Common Footman	*Eilema lurideola*													Wherever there are lichens
Oak Eggar	*Lasiocampa quercus*													Heath, woods, grassland, hedges, fen
Common Rustic	*Mesapamea secalis*													Wide variety of habitats
Ruby Tiger	*Phragmatobia fuliginosa*													Wide variety of habitats
Sussex Emerald	*Thalera fimbrialis*													Shingle beaches, brownfield, chalk
Frosted Orange	*Gortyna flavago*													Woodland, waste ground & marshes
Square-spot Rustic	*Xestia xanthographa*													Woodland edges & suburban areas
Barred Sallow	*Tiliacea aurago*													Wooded habitats including gardens with Beech or Field Maple
Fisher's Estuarine	*Gortyna borelii*													Rough grasslands
Merveille du Jour	*Dichonia aprilina*													Broadleaved woodland & hedgerows
Marsh Mallow Moth	*Hydraecia osseola*													Marshes, fens, riverbanks & ditches
Dark Chestnut	*Conistra ligula*													Wherever *Salix* trees occur

FLIES

Common Name	Scientific Name	Family	J	F	M	A	M	J	J	A	S	O	N	D	Habitat
Marmalade Hoverfly	*Episyrphus balteatus*	Hoverfly	■	■	■	■	■	■	■	■	■	■	■	■	Gardens, hedgerows, parks & woodland in sunny spots
Common Drone Fly	*Eristalis tenax*	Hoverfly	■	■	■	■	■	■	■	■	■	■	■	■	Gardens & hedgerows
Greenbottle	*Lucilia sericata*	Blowfly	■	■	■	■	■	■	■	■	■	■	■	■	Common in most habitats
	Hylemya vagans	Root-maggot fly			■	■	■	■	■	■	■	■	■	■	Meadows & hedgerows
	Syrphus ribesii	Hoverfly			■	■	■	■	■	■	■	■	■	■	Woodland & hedgerows, garden, and waste grounds
Yellow Dung Fly	*Scathophaga stercoraria*	Dung fly			■	■	■	■	■	■	■	■	■		Common near to cattle farms
Sunfly	*Helophilus pendulus*	Hoverfly				■	■	■	■	■	■	■	■		Wet & damp vegetated habitats
Chequered Hoverfly	*Melanostoma scalare*	Hoverfly				■	■	■	■	■	■	■	■		Well vegetated areas including wooded areas & gardens
Noon Fly	*Mesembrina meridiana*	Housefly				■	■	■	■	■	■	■	■		Meadows & grasslands
Snout Fly	*Rhingia campestris*	Hoverfly				■	■	■	■	■	■	■			Open woodlands
	Cheilosia illustrata	Hoverfly				■	■	■	■	■	■				Hedgerows & woodland edge
Narcissus Bulb Fly	*Merodon equestris*	Hoverfly				■	■	■	■	■	■				Parks, open areas in deciduous forests, gardens & farmland
St Mark's Fly	*Bibio marci*	Midge				■	■	■							Woodland edges, hedges, rough grassland & wetlands
Dark-Edged Beefly	*Bombylius major*	Bee-fly				■	■								Grassland, farmland, woodland, heath/moorland & gardens
Batman Hoverfly	*Myathropa florea*	Hoverfly					■	■	■	■	■	■			Deciduous forests, farmland with trees, parks & gardens
Hornet Mimic Hoverfly	*Volucella zonaria*	Hoverfly					■	■	■	■	■	■			Woodland, towns & gardens
	Xylota sylvarum	Hoverfly					■	■	■	■	■	■			Wooded areas
Pellucid Hoverfly	*Volucella pellucens*	Hoverfly					■	■	■	■	■	■			Wooded hedgerows & woodlands
Hedgehog Fly	*Tachina fera*	Tachinid fly					■	■	■	■	■	■			Moist, well vegetated areas
Ferruginous Beegrabber	*Sicus ferrugineus*	Thick-headed fly					■	■	■	■	■	■			Hedgerows & flower meadows
	Chrysotoxum bicinctum	Hoverfly					■	■	■	■	■	■			Trees & grassy habitats, usually sheltered near to shrubs
	Volucella bombylans	Hoverfly					■	■	■	■	■	■			Hedgerows, woodland margins & urban wasteland
Muscid Fly	*Graphomya maculata*	House fly					■	■	■	■	■				Meadows, hedgerows & roadside verges
Phasia Fly	*Phasia hemiptera*	Tachinid fly					■	■	■	■					Wooded areas & hedgerows
Broad Centurion	*Chloromyia formosa*	Soldier fly					■	■	■	■					Woods, hedgerows, parks & gardens
Waisted Beegrabber	*Physocephala rufipes*	Thick-headed fly					■	■	■	■					Flower rich areas
Parasite Fly	*Eriothrix rufomaculata*	Tachinid fly						■	■	■	■	■			Grassy, flower-rich areas
Ladybird Fly	*Gymnosoma rotundatum*	Tachinid fly						■	■	■	■				Heathland, parks, gardens & hedgerows. Often in dry, sandy areas
Four Banded Beegrabber	*Conops quadrifasciatus*	Thick-headed fly						■	■	■	■				Rough flowery places like meadows & roadsides
Lesser Hornet Hoverfly	*Volucella inanis*	Hoverfly						■	■	■	■				Flower meadows, roadside verges & hedgerows
Hedgehog Fly	*Nowickia ferox*	Tachinid fly						■	■	■					Spruce forest edge, meadows, areas of heath
Locust Blowfly	*Stomorhina lunata*	Blowfly							■	■	■	■			Meadows

BEETLES

Common Name	Scientific Name	Family	F	M	A	M	J	J	A	S	O	Habitat
24-spot Ladybird	*Subcoccinella vigintiquattuorpunctata*	Ladybird										Rough grassland and scrub
	Meligethes atratus	Pollen beetle										Flower-rich scrub, woodland edges, parkland & hedgerows
7-spot Ladybird	*Coccinella septempunctata*	Ladybird										Woodland, parkland, dunes, moorland & gardens
2-spot Ladybird	*Adalia bipunctata*	Ladybird										Grassland, woodland, parks, towns & gardens
Wasp Beetle	*Clytus arietis*	Longhorn beetle										Woodland, gardens & urban parks
	Notoxus monoceros	Ant-like beetles										Dry sandy coastal sites, sometimes on dry set-aside fields
Thick-legged Flower Beetle	*Oedemera nobilis*	False oil beetles										Flower meadows, gardens & flower-rich waste ground
	Cryptocephalus aureolus	Leaf beetles										Lightly grazed calcareous grassland
	Cryptocephalus hypochaeridis	Leaf beetles										Chalk/limestone grassland
	Anaspis maculata	False flower										Open structured flowers e.g., Hawthorn, Hogweed, Daisy etc
Hawthorn Leaf Beetle	*Lochmaea crataegi*	Leaf beetles										Anywhere with Hawthorn (hedgerows & woodlands)
Common Malachite Beetle	*Malachius bipustulatus*	Soft winged flower beetles										Lowland meadows & agricultural borders/hedgerows
Brown Chafer	*Serica brunnea*	Scarabs & Chafers										Grassland & scrub, woodland, parkland & gardens
	Stenurella melanura	Longhorn beetles										Wooded areas, parkland, meadows
Spotted Longhorn Beetle	*Rutpela maculata*	Longhorn beetles										Wooded borders, hedgerows, etc. with decaying timber
	Stictoleptura rubra	Longhorn beetles										Woodlands, hedgerows & gardens
Rose Chafer	*Cetonia aurata*	Scarabs & Chafers										Woodland, grassland and gardens
Sulphur Beetle	*Cteniopus sulphureus*	Comb-clawed beetles										Dry places such as sand dunes or chalk downland
	Cantharis rustica	Soldier beetle										Tall grasses, open grassland & woodland, parks & gardens
	Trichius gallicus	Scarabs & Chafers										Found almost exclusively at Samphire Hoe
	Phyllopertha horticola	Scarabs & Chafers										Parkland, wooded pasture & grassland generally
Raspberry Beetle	*JByturus tomentosus*	Raspberry beetle										Grasslands with buttercups, gardens with raspberries
Red-headed Cardinal Beetle	*Pyrochroa serraticornis*	Cardinal beetles										Woodland, hedgerows, parks & gardens
Common Cockchafer	*Melolontha melolontha*	Scarabs and Chafers										Broadleaf woodland margins, arable /open grassland & gardens
Common Red Soldier Beetle	*Rhagonycha fulva*	Soldier beetle										Flower-rich grassland, woodland, gardens, wasteland & arable edges
Welsh Chafer	*Hoplia philanthus*	Scarabs & Chafers										Meadows, hedgerows & woodland edges
Noble Chafer	*Gnorimus nobilis*	Scarabs & Chafers										Old traditional orchards
Musk Beetle	*Aromia moschata*	Longhorn beetle										Near willows; woodland, wetland, riversides
	Gnorimus nobilis	Scarabs & Chafers										Old traditional orchards
	Aromia moschata	Longhorn beetle										Near willows, woodland, wetlands, riversides

HOW TO PHOTOGRAPH POLLINATORS

Most camera phones are good enough to capture a pollinator at rest on a flower or leaf. But if you want those detailed close-up pictures, you will need the equipment that allows you to take those photos.

To start, you will need a digital SLR camera, and a macro lens. To reflect natural light onto your subject, you will want a reflector, which you can buy or improvise with a silver cake board or even white card will work. For more light, you will want a ring flash that attaches to your camera. Every movement will be amplified due to the magnification you are working at, so a tripod or way to stabilise your camera and subject are necessary.

If you have enough natural light, set the ISO to 100 or 200. This reduces image noise and allows you to capture intricate details. It is easier to work with such small objects in manual mode. Start with an aperture of f14 and then play around until you get as much detail on the insect as you want. Again, any vibrations will blur the image, so use a delayed timer of about 10 seconds (if your subject allows you the luxury) so that movement from pushing the button is decreased. You can also set up mirror lock which raises the mirror ahead of taking your photo to further reduce vibrations.

Use manual focus to pick the part of the pollinator you want the image to be focused on. If you are struggling to get enough of the insect in focus, try physically moving the camera back to increase the depth of field. You can then go back and crop the image into the original composition.

When deciding on your composition, think about background and the story you want to tell. A brown moth on bark may be hard to see and would stand out better on a green leaf. However, if you are highlighting its brilliant camouflage then try to think of a way to make sure it can still be seen.

A final tip: don't let your shadow move over the insect. Not only will this ruin the lighting, but it may disturb your subject, causing them to fly off.

Try starting with easy, slower subjects, such as beetles on flowers or moths caught in a moth trap (they will be slower in the morning). Then build up to the skittish butterflies and speedy flies. As you are working with live animals, care is always needed not to injure them. Plus, a lot of patience and practice to achieve the images you want, but it will be worth it.

2 RANSCOMBE FARM RESERVE

- managed by the charity Plantlife primarily for the benefit of rare arable wildflowers
- also contains ancient woodland and flower-rich grassland

3 BLEAN WOODS

- one of the largest areas of ancient woodland in England
- a patchwork of coppice woodland, forest, plantation, glades and heathland surrounded by orchards and pasture on the lower ground
- see also: Ham Street, Ashenbank Wood

4 STODMARSH

- a spectacular wetland reserve of reedbeds, marshes, lakes and wet woodland
- home to a wide diversity of wildlife including rare moths
- see also: Elmley National Nature Reserve, Northward Hill, Cliffe Pools, Oare Marshes, Swale National Nature Reserve

1 LULLINGSTONE COUNTRY PARK AND PRESTON HILL

- extensive areas of chalk meadows and grazed slopes plus woodland and veteran trees
- see also: Trosley Country Park, Darland Banks, Queendown Warren, Lydden Temple Ewell

5 SANDWICH AND PEGWELL BAY NATIONAL NATURE RESERVE

- the saltmarshes, grassland, cliffs and dunes are home to plant and insect diversity
- the sandflats are renowned for their marine and bird life
- see also: Grain Coastal Park, Reculver Country Park

10 YALDING FEN

- a patchwork of habitats including a traditional orchard, ponds, willow carr and woodland, each supporting its own community of organisms
- see also: No Man's Orchard

6 CHALK CLIFFS (Folkestone Warren – Samphire Hoe – White Cliffs)

- three different locations with varied communities of plants and animals on the tops, faces and bases of the cliffs
- see also: Pegwell Bay, Foreness Point, Margate

9 MARDEN MEADOWS

- one of the best remaining examples of unimproved hay meadows in Kent
- the site is a Coronation Meadow, supplying local provenance seeds to other meadow restoration projects

8 HOTHFIELD HEATHLANDS

- contains a rare fragment of open heath and our last valley bogs
- many pollinators nest in the exposed sand of the heath
- see also: Dartford Heath, Bedgebury, Tudeley Woods, Tunbridge Wells and Rusthall Commons, Old Park (acid grassland)

7 DUNGENESS NATIONAL NATURE RESERVE

- known to some as the UK's only desert
- includes many kilometres of open shingle, freshwater pits, wet grassland and wildflower meadows
- the communities of organisms that live here are both unique and fragile

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