Flower-Insect Timed Count: target flower guide

This guide has been developed to support the Flower-Insect Timed Count survey (FIT Count) that forms part of the UK Pollinator Monitoring Scheme (PoMS).

Links

Introduction

This document provides a guide to the 14 flower species or types that are our targets for the FIT Count. When carrying out a count, we would like you to focus on one of these target flowers if at all possible, as this will make the counts more consistent and enable us to compare insect numbers from year to year. However, if you cannot find any of the target flowers in your area you are free to choose another flowering plant as your focus. A list of suggested alternative flowers is given at the end.

Each target flower is shown in order of the month that they usually begin to flower, but you can use the target species for your count whenever you find them flowering, you don't have to stick to the months suggested. There is also information on where you might find the plant, any identification tips that might be needed, and how to count the flowers.

The UK PoMS Partnership

The UK Pollinator Monitoring Scheme (PoMS) is a partnership funded jointly by the UK Centre for Ecology and Hydrology (UKCEH) and Joint Nature Conservation Committee (JNCC) (through funding from Defra, Scottish Government, Welsh Government, and DAERA).

UK PoMS is co-ordinated by UKCEH, working with our project partners: Bumblebee Conservation Trust, Butterfly Conservation, British Trust for Ornithology, Buglife, Hymettus, Natural History Museum, Royal Horticultural Society, University of Reading and University of Leeds. UK PoMS is indebted to the many volunteers who carry out surveys and contribute data to the scheme, as well as to those who allow access to their land. Without their efforts, this scheme would not be possible.

For further information about UK PoMS go to: ukpoms.org.uk

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From April onwards

Dandelion, *Taraxacum officinale* agg.

Apr	May	June	July	Aug	Sept

The familiar flowers of Dandelion are found in a very wide range of habitats, but prefer disturbed sites such as pastures, roadside verges, lawns, tracks, paths and waste ground.

They can be confused with other yellow composite flowers (e.g. Autumn Hawkbit, shown above) but the hollow stems and white sap are a good indication. See also "When is a Dandelion not a Dandelion?" from the Botanical Society of Britain and Ireland:

- https://bsbi.org/wp-content/uploads/dlm_uploads/2021/05/BSBI-News-147-Beginners-Corner.pdf

There are many 'micro-species' of dandelions, most of which are hard to tell apart. There is no need to identify them to micro-species level for the FIT Count.

Flower counts should be based on the number of **flowerheads** (indicated by circles at the top-left of the above photo collage).

Buttercups, *Ranunculus* species

Apr	May	June	July	Aug	Sept

Buttercups are well-loved flowers of grasslands and hedgerows, especially in countryside areas. They usually have five bright yellow petals. There are several species: the three most widespread ones are Creeping Buttercup (*Ranunculus repens*), Meadow Buttercup (*Ranunculus acris*) and Bulbous Buttercup (*Ranunculus bulbosa*).

There is no need to distinguish the species for the FIT Count, but if you do know which species you have used then please add that information to the recording form. Identification tips are available on pages 50–51 of the Species Identification Guide from the National Plant Monitoring Scheme:

- https://www.npms.org.uk/sites/default/files/PDF/NPMS_Id%20guide_WEB_2ndEd.pdf

See also a beginner's guide to buttercups by Moira O'Donnell for the Botanical Society of Britain and Ireland:

- https://bsbi.org/wp-content/uploads/dlm_uploads/dinkymoira-Buttercups.pdf

Flower counts should be based on the number of **individual flowers** (indicated by white ovals shown on the top-right in the above photo collage).

White Dead-nettle, *Lamium album*

Apr	May	June	July	Aug	Sept

Found in woodland, hedge-banks, waysides and rough ground, and sometimes gardens (often on fertile soils close to habitation). The white flowers have the typical shape of plants in the mint family, with the leaves looking similar to stinging nettle.

Flower counts should be based on the number of **flower spikes** (indicated by ovals at the top-left of the above photo collage).

Hawthorn, *Crataegus*

Apr	May	June	July	Aug	Sept

Hawthorn grows as a shrub, in woodlands or along the edges of woods, forming patches of scrub on grasslands, or as part of hedgerows. The flowers look similar to shrubs such as Blackthorn (which starts flowering earlier in the year) but the leaf shape is distinctive.

There are two species of Hawthorn: Common Hawthorn (*Crataegus monogyna*) is common throughout much of Britain, and Midland Hawthorn (*Crataegus laevigata*) that is largely confined the southern and eastern half of Britain. There is no need to distinguish the species for the FIT Count, but if you do know which species you have used then please add that information to the recording form.

Flower counts should be based on the number of **individual flowers** (indicated by circles at the top-left of the above photo collage). Where Hawthorn grows as a tall shrub or hedge the 50cm × 50cm quadrat can be positioned vertically or at a convenient angle in the shrub, as long as it clearly marks out the area of flowers that you are going to use for your count.

From May onwards

Bramble (or Blackberry), *Rubus fruticosus* agg.

Apr	May	June	July	Aug	Sept

A widespread shrub with white flowers, later producing blackberries, and stems with hooked spines. Found in woods, hedges, heaths and waste places.

There are many 'micro-species' of bramble, which are hard to tell apart. There is no need to identify them to micro-species level for the FIT Count.

Flower counts should be based on the number of **individual flowers** (indicated by circles at the left of the above photo collage).

From June onwards

Lavender (or English Lavender), *Lavandula angustifolia*

Apr	May	June	July	Aug	Sept

A familiar plant of gardens and parks, with distinctive scented purple flowers.

Flower counts should be based on the number of **flower spikes** (indicated by ovals in the above photo). In dense patches of Lavender you may find that you have very many flowers to count. If so it is fine to make an estimate, e.g. by counting flowers in a quarter of the quadrat and multiplying by four to get a total for the whole quadrat.

Hogweed, *Heracleum sphondylium*

Apr	May	June	July	Aug	Sept

Found in a wide range of habitats, including rough and disturbed grassland, especially on roadsides and trackways, woodland rides, scrub, river banks, stabilised dunes, coastal cliffs, montane tall-herb vegetation and waste ground.

There are a number of roughly similar umbellifer plants, but the broad leaves and especially the non-symmetrical petals help to distinguish Hogweed from its relatives.

Flower counts should be based on the number of **flower umbels** (indicated by black circles at the top-right of the above photo collage).

Common and Greater Knapweeds, *Centaurea nigra* and *C. scabiosa*

Apr	May	June	July	Aug	Sept

Common Knapweed is found on a wide range of soils in meadows and pastures, sea-cliffs, roadsides, railway banks, scrub, woodland edges, field borders and waste ground. Greater Knapweed is found in similar situations but is most frequent on chalk or limestone soils, and is less common outside England.

There is no need to distinguish the species for the FIT Count, but if you do know which species you have used then please add that information to the recording form – see ID tips below.

Flower counts should be based on the number of **flowerheads** (indicated by white circles in the above photo collage).

Common Knapweed: bracts around base of flower are mostly brown

Greater Knapweed: bracts around base of flower are green with brown edges

White Clover, *Trifolium repens*

Apr	May	June	July	Aug	Sept

Found in a wide range of grasslands, especially those that are grazed or mown, and also on waste ground and in other ruderal habitats. It is widely sown into agricultural grasslands, and on roadsides, and many commercial cultivars are available.

Flower counts should be based on the number of **flowerheads** (indicated by circles in the above photo).

(Red Clover is also attractive to pollinating insects, and can be used for the FIT Count as well, but if you have White Clover available then that is the one we'd like you to target first.)

Ragwort, *Senecio jacobaea* and relatives

Apr	May	June	July	Aug	Sept

Common Ragwort is widespread in grassland and especially abundant in neglected, rabbit-infested or overgrazed pastures. It can also be found on sand dunes, in scrub, open woods and along woodland rides, waste ground, road verges and waysides, and on rocks, screes and walls.

There are several other ragwort species in genus *Senecio*. Marsh Ragwort is widespread in wet grasslands and wetlands, while Hoary Ragwort is found on dry grasslands (often on chalk or limestone) in southern Britain, and Oxford Ragwort is spreading in southern Britain, especially on waste ground and roadsides. For the FIT Count you can just treat ragworts as a group, but if you do know the exact species please add it to the recording form.

Identification tips for three of the ragwort species are available on pages 55–56 of the Species Identification Guide from the National Plant Monitoring Scheme:

- https://www.npms.org.uk/sites/default/files/PDF/NPMS_Id%20guide_WEB_2ndEd.pdf

Flower counts should be based on the number of **flowerheads** (indicated by circles in the above photo).

From July onwards

Heathers, *Calluna vulgaris* and *Erica* sp.

Apr	May	June	July	Aug	Sept

Shrubby plants that grow on heaths, moors and nutrient-poor grasslands, and in open woodland on acidic soils. They can become the dominant species across large parts of heaths and moors.

The native Heather is *Calluna vulgaris*, but this often grows alongside related plants in genus *Erica*, including Bell Heather and Cross-leaved Heath, which have larger and more brightly-coloured flowers (see below). There are also varieties of Heather grown in gardens, some of which flower much earlier in the year. Any of these can be used for the FIT Count, and if you know which type of 'heather' you are focusing on please tell us on the recording form.

Flower counts should be based on the number of **flower spikes** (indicated by ovals at top-left in the above photo collage). If the flowers in your patch are very dense so it is fine to make an estimate, e.g. by counting flowers in a quarter of the quadrat and multiplying by four to get a total for the whole quadrat.

The larger, brighter flowers of Bell Heather (left, © nz_willowherb via Flickr CC) and Cross-leaved Heath (right, © Natural England via Flickr CC).

Thistles, *Cirsium* and *Carduus* species

Apr	May	June	July	Aug	Sept

There are a number of thistle species in genus *Cirsium* and genus *Carduus*. The three most widespread species are shown below, but you can choose any thistle species for your FIT Count and you don't need to know the exact species (but if you do know, please add it to the recording form, and take photos of the flowers and stems).

See also "Getting to know the common thistles" from the Botanical Society of Britain and Ireland:

- https://bsbi.org/wp-content/uploads/dlm_uploads/2022/09/BSBI-News-151-p30-33-Beginners-Corner.pdf

Flower counts for all thistles should be based on the number of **flowerheads** (indicated by circles in the photos below).

Creeping Thistle, *Cirsium arvense*, is found in pastures, hay meadows and rough grassy places, roadsides, arable fields and other cultivated land, and in urban habitats and waste ground. It has pale, lilac-coloured flowers, and there are spines on the leaves but not on the stems.

Spear Thistle, *Cirsium vulgare*, is found in a wide range of habitats, including overgrazed pastures and rough grassland, sea-cliffs, dunes, drift lines and disturbed habitats including arable fields, spoil heaps, waste ground and burnt areas in woodland. The flowers are larger and darker purple than for Creeping Thistle, and in Spear Thistle there are spines on both the leaves and the stems.

Creeping Thistle has no spines on its stems (left),
Spear Thistle has spiny stems (right).

Marsh Thistle, *Cirsium palustre*, is often found in wetter habitats including fens, marshes, damp grassland, wet woodland and upland springs and flushes, but it also grows in drier conditions such as chalk download. It usually grows tall, unbranched stems, with clusters of fairly small purple flowers. Both leaves and stem are spiny. (Welted Thistle, *Carduus crispus*, is sometimes confused with Marsh Thistle. Welted Thistle usually has obvious branches to its stems.)

Buddleja (or Buddleia, or Butterfly-bush), *Buddleja davidii*

Apr	May	June	July	Aug	Sept

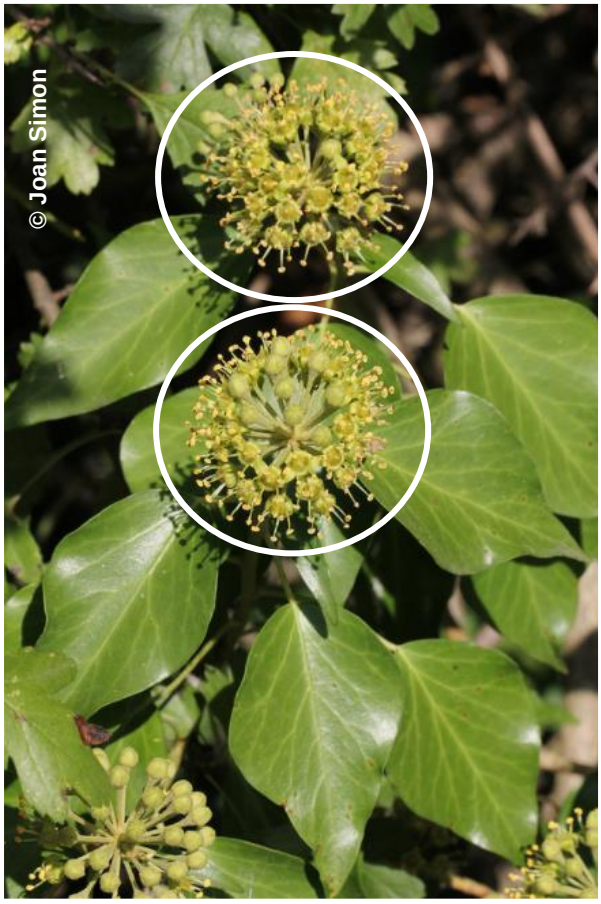
A familiar garden shrub that also grows on waste ground, by railways, in quarries, on roadsides and generally in urban habitats (where it often grows on walls and neglected buildings). It prefers dry, disturbed sites where large populations can develop from its wind-dispersed seed.

There are a range of species and varieties of Buddleja – for the FIT Count please look for the typical and most widespread species, *Buddleja davidii*, but other types of Buddleja can be used (please say on the recording form if you have used one of the others, such as *Buddleja globosa* that has smaller, rounded, orange flower spikes).

Flower counts should be based on the number of **flower spikes** (indicated by ovals shown bottom-left in the above photo collage).

Ivy, *Hedera helix*

Apr	May	June	July	Aug	Sept



A familiar evergreen plant that sometimes scrambles over areas of the ground (e.g. in woodlands) but will also climb using tree trunks or walls etc. as a support, where it can grow to a large size with woody stems. Only mature climbing plants produce flowers. The flowers are an inconspicuous pale greenish-yellow and appear in clusters in late summer, lasting into the autumn. They provide a very valuable nectar and pollen resource for insects late in the year.

Flower counts should be based on the number of **flower heads** (indicated by white ovals shown on the left in the above photo collage). The flower heads vary in size and in how separated they ae, and it can be difficult to decide whether you are seeing one large flower head or a group of smaller ones, so just estimate a consistent number as best you can.

Honeybee on Ivy flower © stanze / FlickrCC

Alternative flowers that are suitable for the FIT Count

If you cannot find any of the 14 target flowers listed above you are free to choose another target that is attracting insects at your location. The list below gives some additional species that are known to attract pollinating insects, but if needed you can use other species that are not on the list. Please let us know which flower species or type you have used when adding your results to the online recording form.

- Identification tips for some species are available in the Species Identification Guide from the National Plant Monitoring Scheme: https://www.npms.org.uk/sites/default/files/PDF/NPMS_Id%20guide_WEB_2ndEd.pdf

English	Taxon	Type	Flowering	Flowering to	Flower type
Red Dead-nettle	*Lamium purpureum*	wild	January	December	flower spike
Sallow / willow	*Salix*	wild	February	May	flowerhead (catkin)
Blackthorn	*Prunus spinosa*	wild	March	May	individual flower
Lungwort	*Pulmonaria*	garden	March	May	flower spike
Ground Ivy	*Glechoma hederacea*	wild (garden)	March	June	flower spike
Comfrey	*Symphytum officinale*	garden, wild	March	June	Individual flower
Veronicas	*Veronica*	wild, garden	March	September	flower spike
Apple	*Malus pumila*	garden, wild	April	May	individual flower
Wild Cherry	*Prunus avium*	wild	April	May	individual flower
Cow Parsley	*Anthriscus sylvestris*	wild	April	June	flower umbel
Lousewort	*Pedicularis sylvatica*	wild	April	July	flower spike
Green alkanet	*Pentaglottis sempervirens*	garden, wild	April	July	individual flower
Forget-me-nots	*Myosotis*	wild, garden	April	September	individual flower
Borage	*Borago officinalis*	garden, agri	April	October	individual flower
Firethorn	*Pyracantha*	garden	May	June	individual flower
Rhododendron	*Rhododendron ponticum*	parks, gardens	May	June	individual flower
Rowan / Mountain Ash	*Sorbus aucuparia*	wild	May	June	flower umbel
Bugle	*Ajuga reptans*	wild, garden	May	July	flower spike
Cranesbills	*Geranium*	garden, wild	May	September	individual flower
Catmint	*Nepeta*	garden	May	September	flower spike
Red Clover	*Trifolium pratense*	wild, agri	May	September	flowerhead
Poppies	*Papaver*	garden, agri	May	October	individual flower
Mountain Pansy	*Viola lutea*	wild	June	August	individual flower
Yarrow	*Achillea millefolium*	wild, garden, agri	June	September	flower umbel
Bellflower	*Campanula*	garden, wild	June	September	individual flower
Cornflower	*Centaurea cyaneus*	garden	June	September	flowerhead
Wild Carrot	*Daucus carota subsp. carota*	wild	June	September	flower umbel
Foxglove	*Digitalis purpurea*	wild, garden	June	September	individual flower
Bell Heather/Cross-leaved Heath	*Erica cinerea* and *Erica tetralix*	wild, garden	June	September	flower spike
Bird's-foot Trefoil	*Lotus*	wild	June	September	flowerhead
Tormentil	*Potentilla erecta*	wild	June	September	individual flower
Common Toadflax	*Linaria vulgaris*	wild	June	October	flower spike
Sow-thistles	*Sonchus*	wild	June	October	flowerhead
Wild Angelica	*Angelica sylvestris*	wild	July	August	flower umbel
Globe Thistle	*Echinops*	garden	July	August	flowerhead
Field Scabious	*Knautia arvensis*	wild	July	August	flowerhead
Rosebay Willowherb	*Chamerion angustifolium*	wild, brownfield	July	September	flower spike
Hemp-agrimony	*Eupatorium cannabinum*	wild	July	September	flowerhead
Marjoram	*Origanum*	wild, garden	July	September	flower spike
Fleabane	*Pulicaria dysenterica*	wild	July	September	flowerhead
Lamb's ears	*Stachys byzantina*	garden	July	September	flower spike
Devil's-bit Scabious	*Succisa pratensis*	wild	July	September	flowerhead
Scentless Mayweed	*Tripleurospermum inodorum*	wild	July	September	flowerhead
Himalayan/Indian Balsam	*Impatiens glandulifera*	wild	July	October	individual flower