An tIonad Náisiúnta Sonraí Bithéagsúlachta
National Biodiversity Data Centre

POLLINATOR MONITORING: FLOWER-INSECT TIMED COUNT SCHEME 2025 NEWSLETTER

Dandelion FIT Count (Michelle Larkin)

Solitary bee on Common Hogweed (Michelle Larkin)

What is it?

Flower-Insect Timed Counts (FIT Counts) is a citizen science scheme run by the National Biodiversity Data Centre. FIT Counts are very simple – volunteers watch a 50cm x 50cm patch of flowers for 10 minutes and count how many insects visit. The scheme runs from April to September and can be carried out anywhere e.g., garden, farm, park, school. We encourage volunteers carry out a FIT Count on one of the 15 target flowers (page 2), but you can do a count on any flower that insects visit. You don't need to identify the insects to species, just to the following ten broad groups – beetles, bumblebees, butterflies and moths, honeybees, hoverflies, other flies, other insects, small insects, solitary bees and wasps.

Why is it important?

There are concerns that the numbers of pollinating insects such as bees and flies are declining, but we need much more data to be able to track changes in abundance. FIT Counts are designed to collect data on the numbers of flower-visiting insects. It is a very useful tool for individuals, community groups and others to measure change in their local biodiversity. If you've taken action as part of the All-Ireland Pollinator Plan, carrying out FIT Counts throughout the year and across future years will help track the impact of your actions on insect numbers and diversity.

Who can take part?

The scheme is open to everyone, and you can carry out as many or as few FIT Counts as you like. No previous experience is required - we have lots of free resources to help you at **https://biodiversityireland.ie/surveys/fit-counts/** By far the easiest way to carry out a FIT Count and submit the data is to use the free FIT Count app. We express our thanks to the UK Pollinator Monitoring Scheme and to the EU SPRING project who developed a version of the app for use within Ireland. FIT Counts for Northern Ireland are submitted to the UK Pollinator Monitoring Scheme.

https://biodiversityireland.ie/surveys/fit-counts/

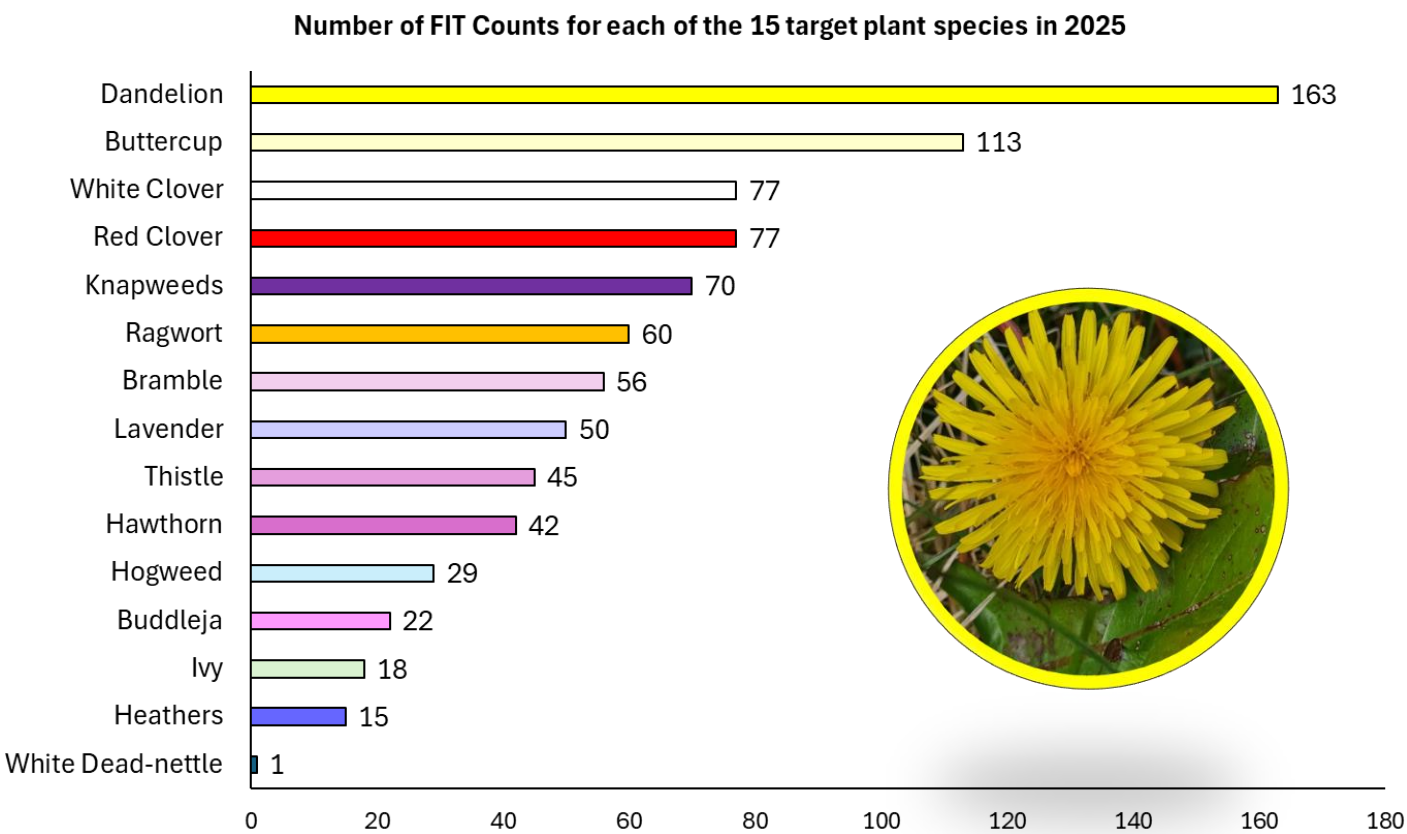
2025 at a glance

	2025
Total number of validated FIT Counts	1,323
Number of volunteers	235
Total number of insects counted	12,070
Average number of insects per FIT Count	9
Most common insect group recorded	Other flies
Most common habitat FIT Counts were carried out in	Garden
Flower that most FIT Counts were completed on	Dandelion

What target flowers were most FIT Counts carried out on?

There are 15 target flowers that we encourage volunteers to preferentially carry out FIT Counts on. White Dead-nettle is relatively rare, but outside this, the aim is to ultimately reach 100 FIT counts of each of these species each year. Both dandelion and buttercup reached our 100 FIT Count in 2025.

You can also carry out a FIT Count on any other flower that insects are visiting. FIT Counts were completed on a total of 147 other flowers in 2025. The most popular were Bird's foot trefoil, Daisy, Hawkbits, Marsh Woundwort, Yarrow and Catmint.



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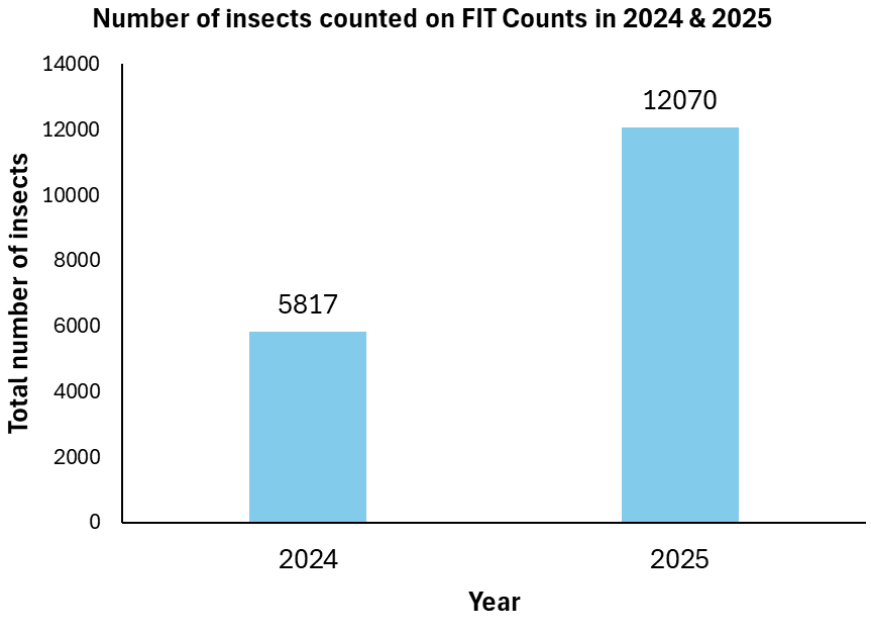
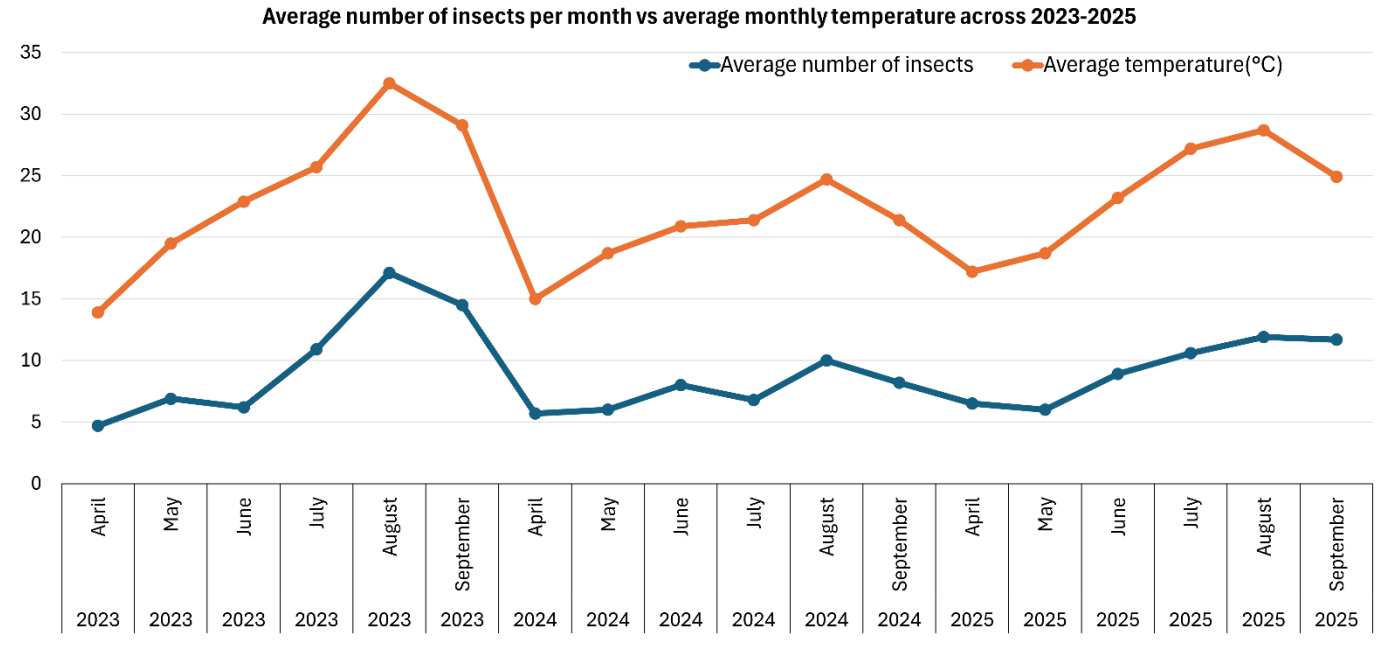
https://biodiversityireland.ie/surveys/fit-counts/

Year by year



- There was over 500 additional FIT Counts conducted in 2025 compared to 2024.
- Preliminary results from Met Éireann reported that 2025 was the second warmest year on record in Ireland since 1900. March and the start of April were largely dry giving insects a good start to the year.
- In comparison, April in 2024 experienced above average rainfall, which may have impacted insect numbers at the start of the flight season.
- Although annual fluctuations in insect numbers are to be expected, by continuing to collect annual data, we hope to use this data to determine if these changes are natural fluctuations or part of a more widespread, ongoing trend.



- The average number of insects counted on FIT Counts from 2023-2025 roughly follow the average monthly temperature.

https://biodiversityireland.ie/surveys/fit-counts/

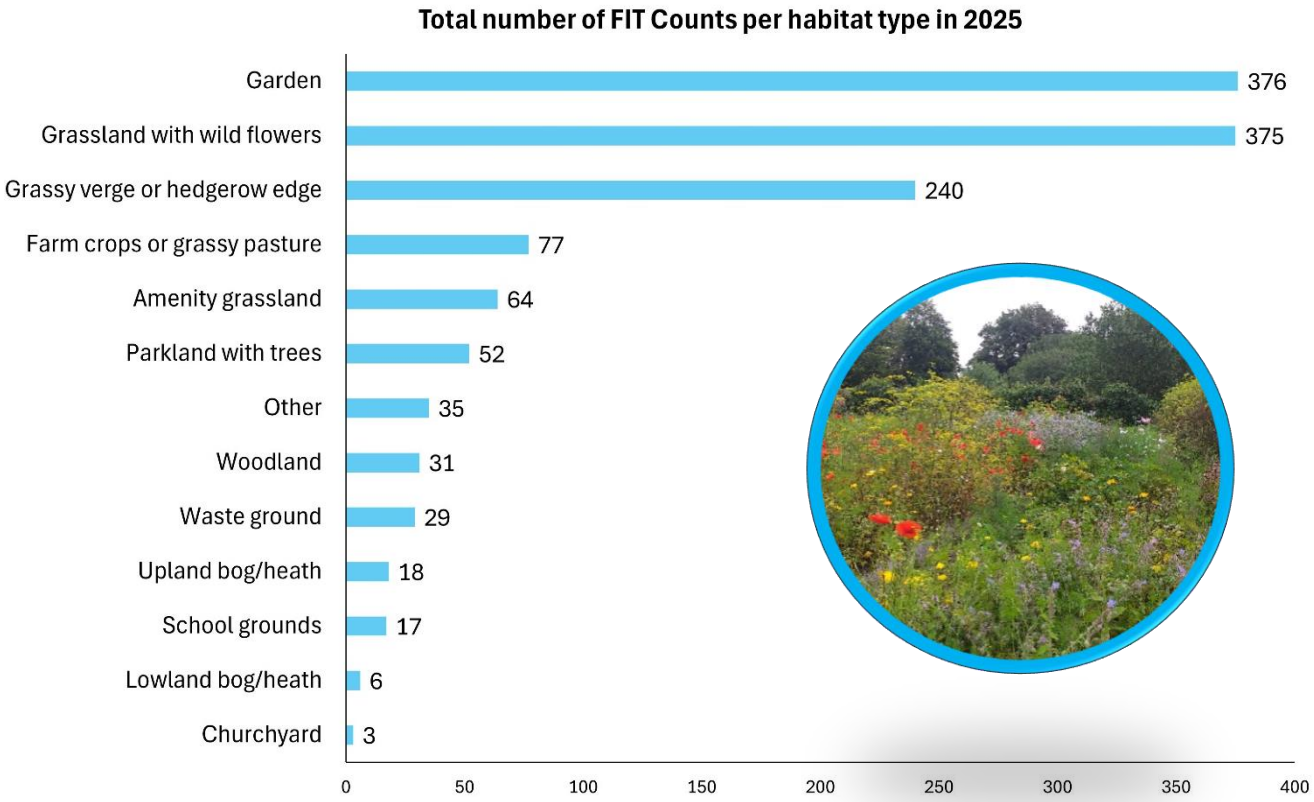
2025 Met Éireann Climate Statement: https://www.met.ie/annual-climate-statement-for-2025

What habitats were most FIT Counts carried out in?

In 2024, 30% of FIT Counts were carried out in grasslands with wildflowers followed by grassy verges and hedgerows (24% of FIT Counts).

However, in 2025, there was little difference in the number of counts conducted in gardens and grasslands with wildflowers.

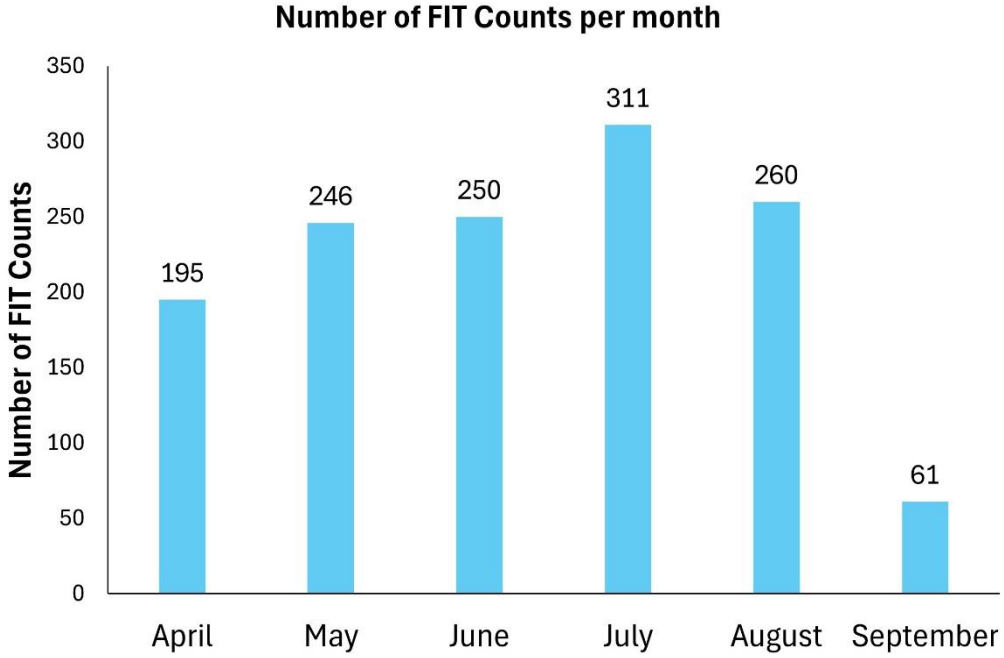
The graph below shows how many FIT Counts were submitted from each habitat. Habitats included under the 'Other' category include flower boxes, machair, dunes, orchard, scrub, limestone pavement and wall boundaries.



What months were most FIT Counts carried out in?

The FIT Count scheme runs from April to September. The aim is to ensure that counts are carried out across the 6-month period. Both 2024 and 2025 had fewer counts in September. July had the highest number of FIT Counts for both years.

The number of FIT Counts conducted across all months increased compared to the same month in 2024.



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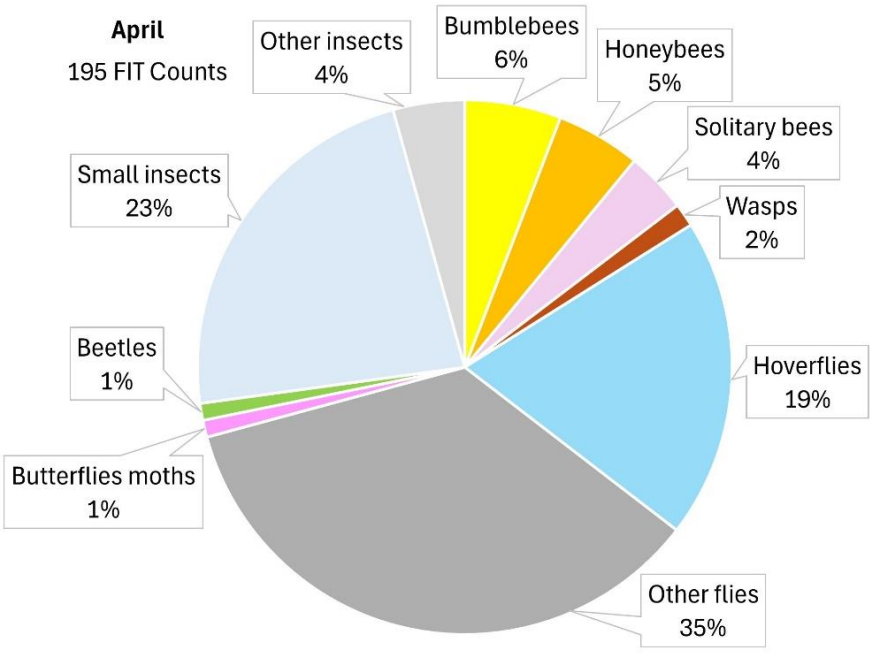
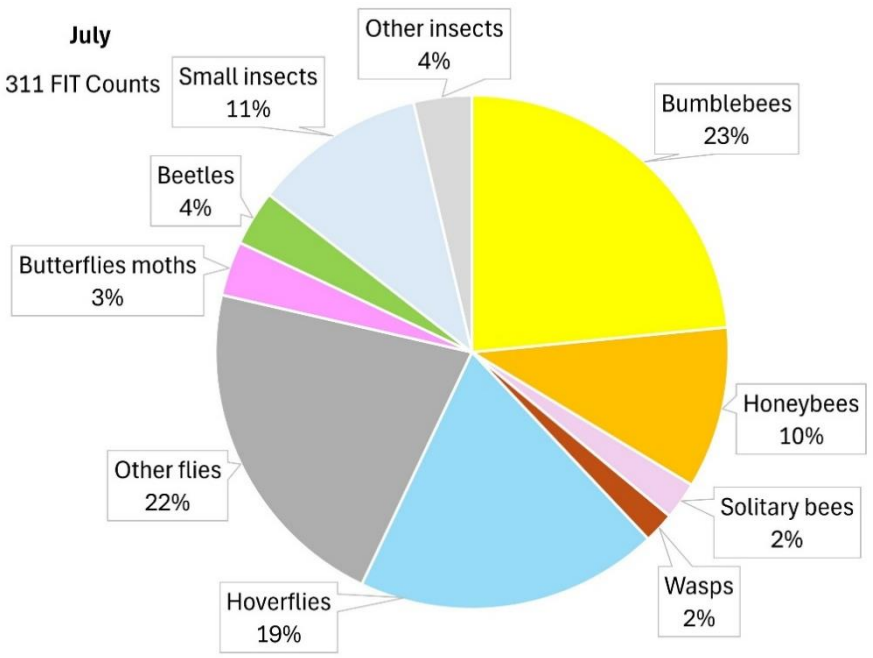
https://biodiversityireland.ie/surveys/fit-counts/

What is the breakdown of different insect groups per month?

Different groups of insects have different core flight periods, and this is reflected in the breakdown of total insects counted in different months.

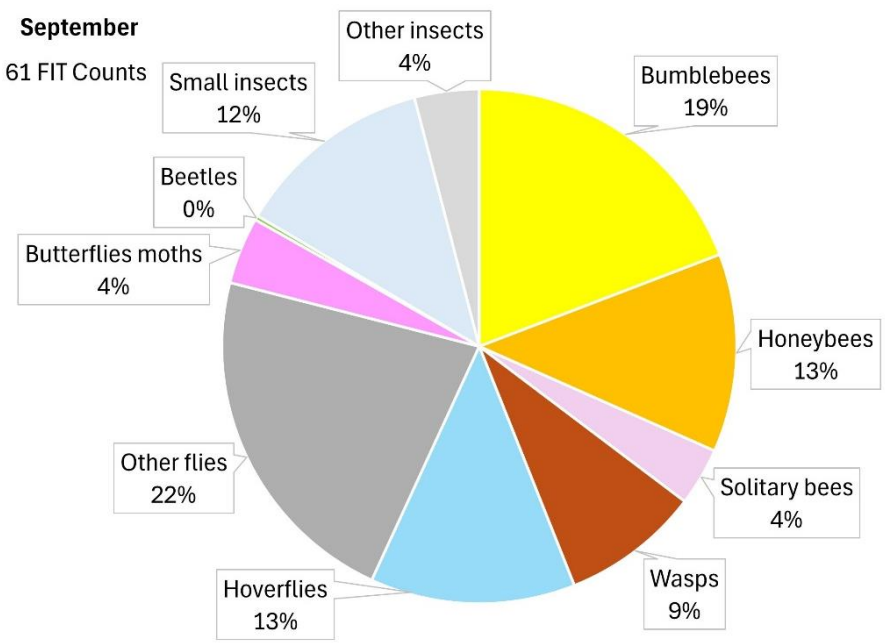


Other flies followed by small insects accounted for most sightings in April.



In summer, most insect groups will be active, as seen in the data.

Bumblebees were the most common group counted in July

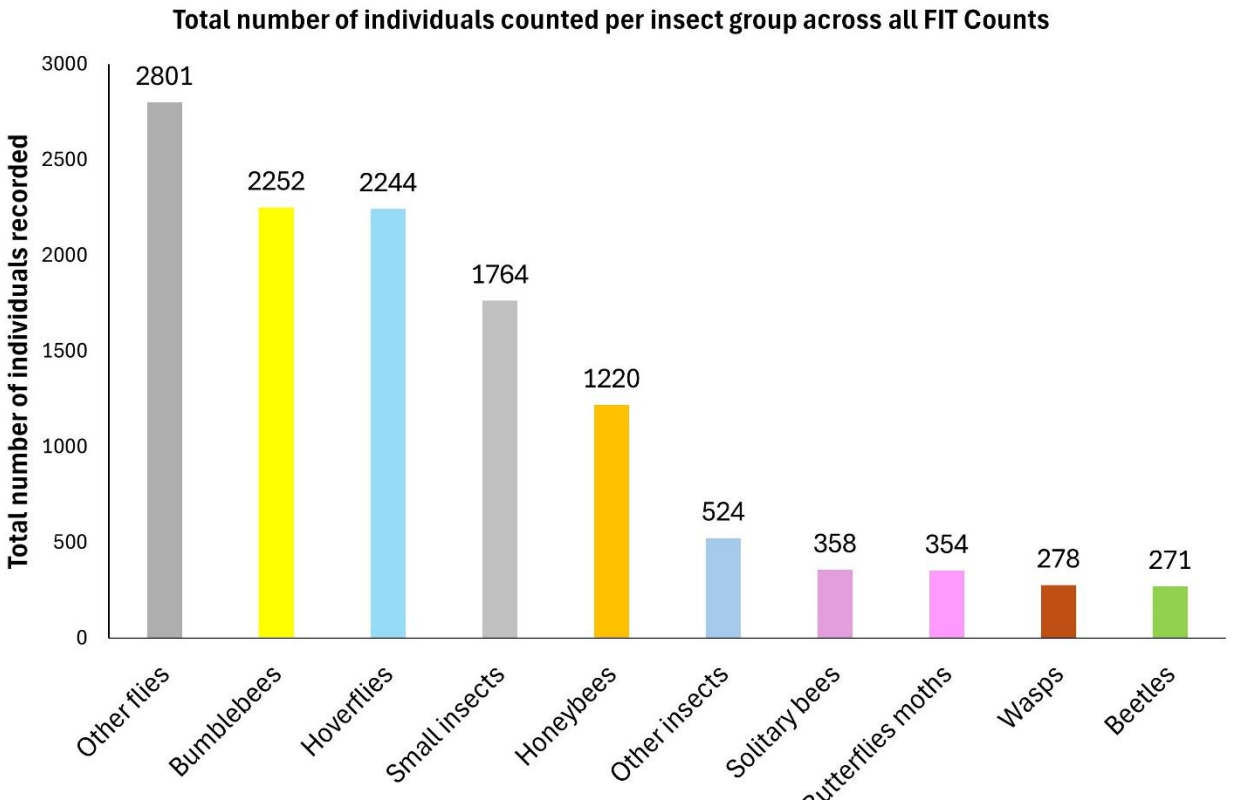


Wasps were observed in low numbers in April and July count, but jumped up to 9% of sightings in September

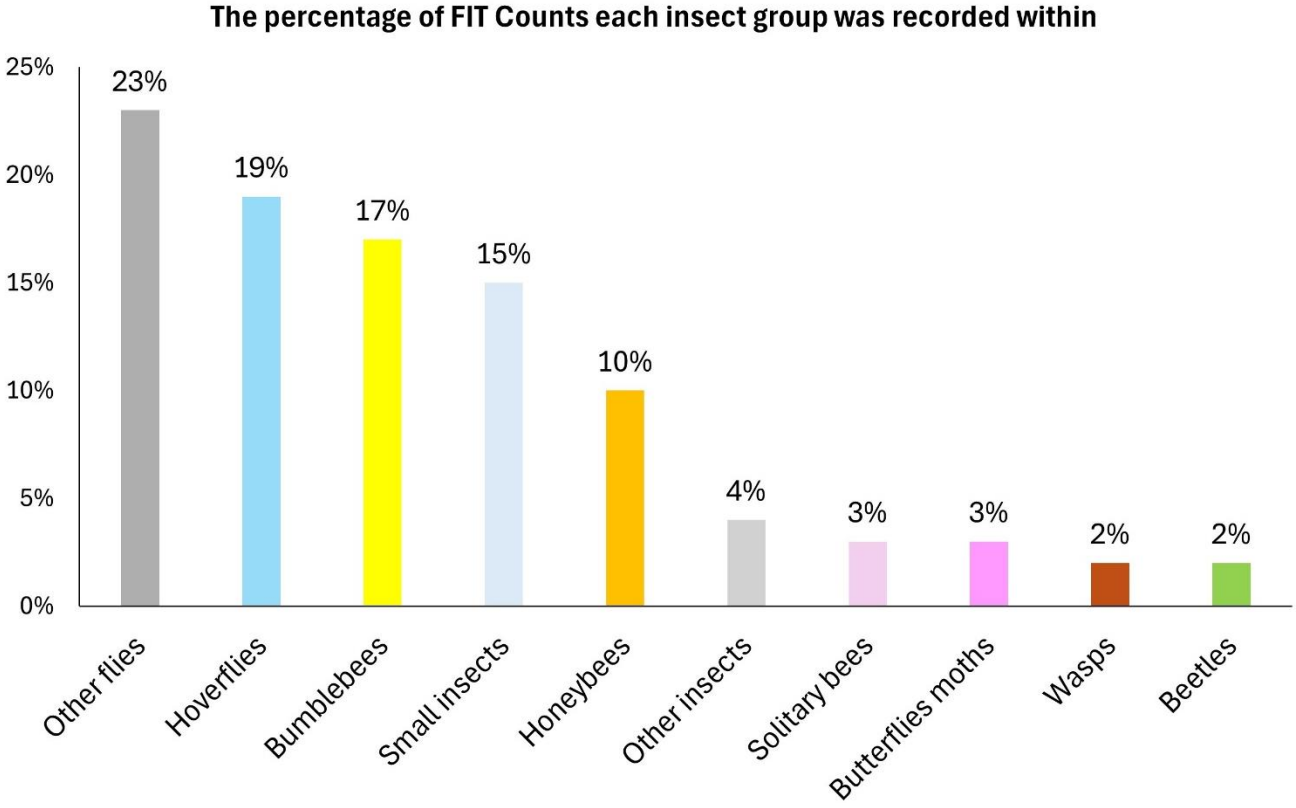
https://biodiversityireland.ie/surveys/fit-counts/

How many insects were recorded using FIT Counts in 2025?

Within FIT Counts, insects are identified to the 10 broad groups listed in the graph below. Across all 2025 FIT Counts, other flies were the most common insect observed, followed by bumblebees and hoverflies.



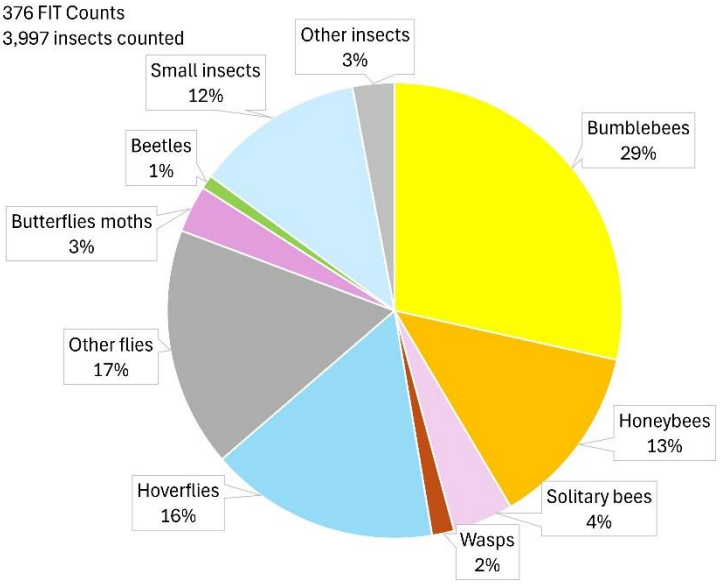
The chart below, shows the percentage of FIT Counts that each of the ten insect groups were recorded on. 23% of FIT Counts in 2025 recorded other flies visiting their flower which is a smaller percentage than in 2024 where other flies accounted for over 50% of counts. Less than 3% had butterflies and moths counted in their FIT Count compared to 9% in 2024 and 16% in 2023.



Comparing insect groups recorded in different habitats

Different habitats support different assemblages of insects, and this is reflected in the data. Below is a breakdown of each insect group for the top three habitats with the highest number of FIT Counts.

Garden
376 FIT Counts
3,997 insects counted

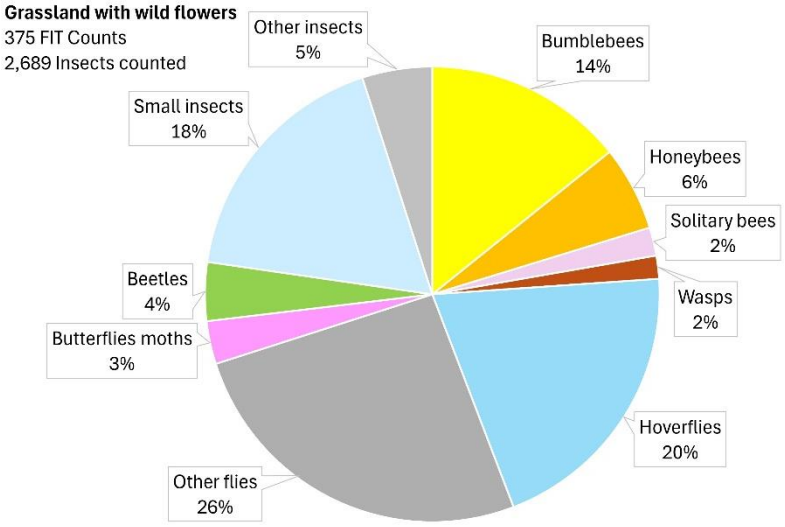


Bumblebees were by far the most common flower visitors in gardens.

There was a higher proportion of solitary bees recorded visiting flowers in gardens compared to grasslands and grassy margins.

Having a range of different types of pollinator friendly plants flowering at different times of the year can help support pollinating insects for their entire lifecycle.

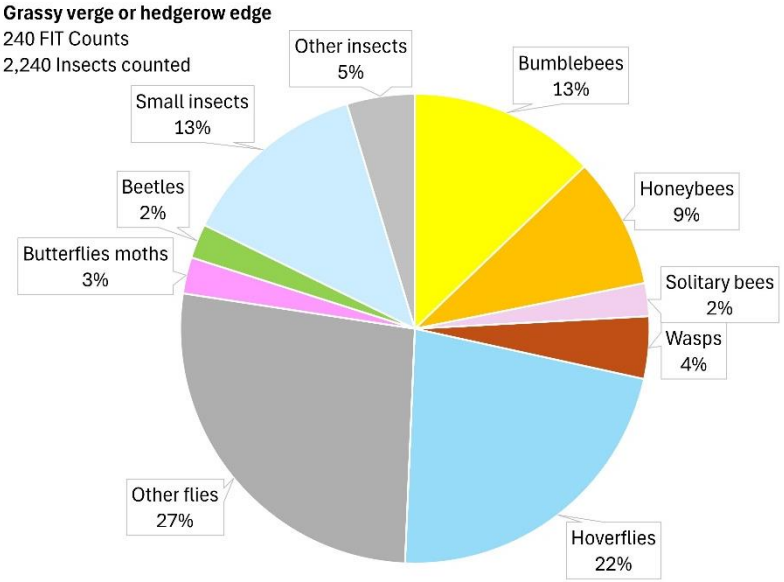
Grassland with wild flowers
375 FIT Counts
2,689 Insects counted



Grasslands with wildflowers were a popular habitat with other flies and hoverflies.

Beetles also made up a higher percentage of the observed insect community when compared to gardens and hedgerows/grassy verges

Grassy verge or hedgerow edge
240 FIT Counts
2,240 Insects counted



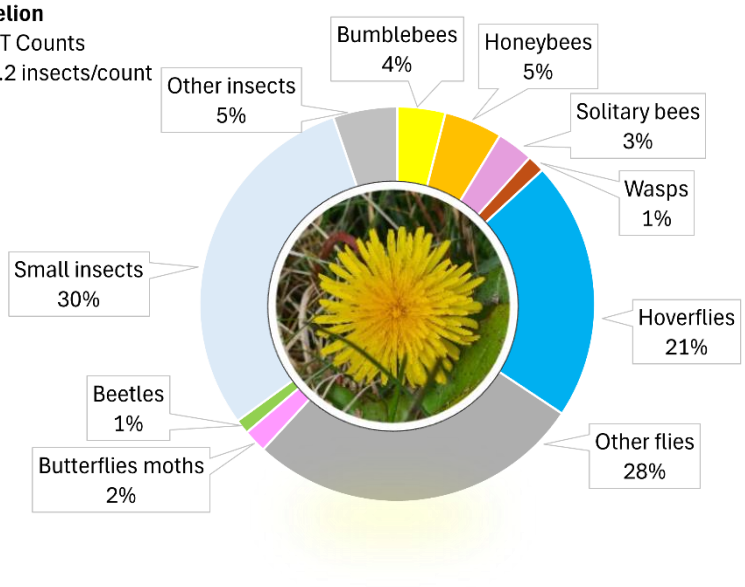
Hoverflies and other flies were the most common group observed along grassy verge or hedgerow edge.

More wasps were found along verges or hedgerows compared to grasslands with wildflowers and gardens. Wasps not only contribute to pollination, but they also prey on other insects and help control populations of aphids, moth larvae, thrips, froghoppers etc.

FIT Counts: comparison of the insect groups recorded by target flower

There are 15 target flowers that we try to encourage volunteers to preferentially carry out FIT Counts on. White Dead-nettle is relatively rare, but outside this, the aim is to ultimately reach 100 counts of each of these species each year. The charts below show the breakdown of different insect groups for the top 8 recorded target flowers in 2025.

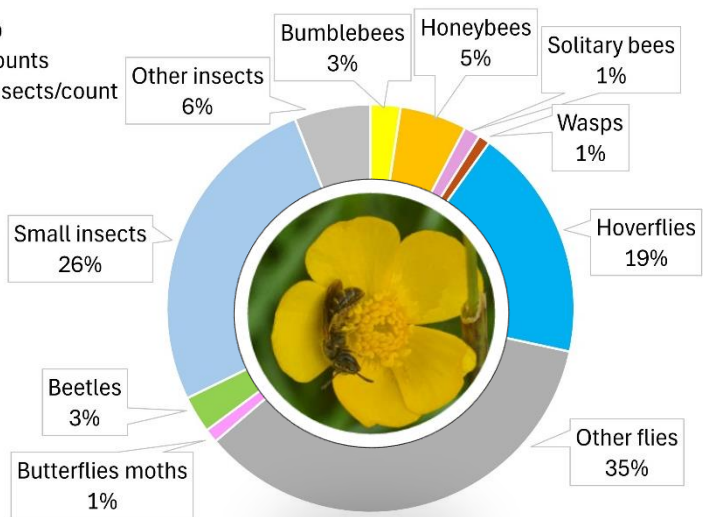
Dandelion
163 FIT Counts
Avg. 5.2 insects/count



Small insects, other flies and hoverflies were the most common insect visitors to dandelions.

Note: take care to correctly identify Dandelion. There are other yellow flowers that look like Dandelion, but only Dandelion has a hollow stem.

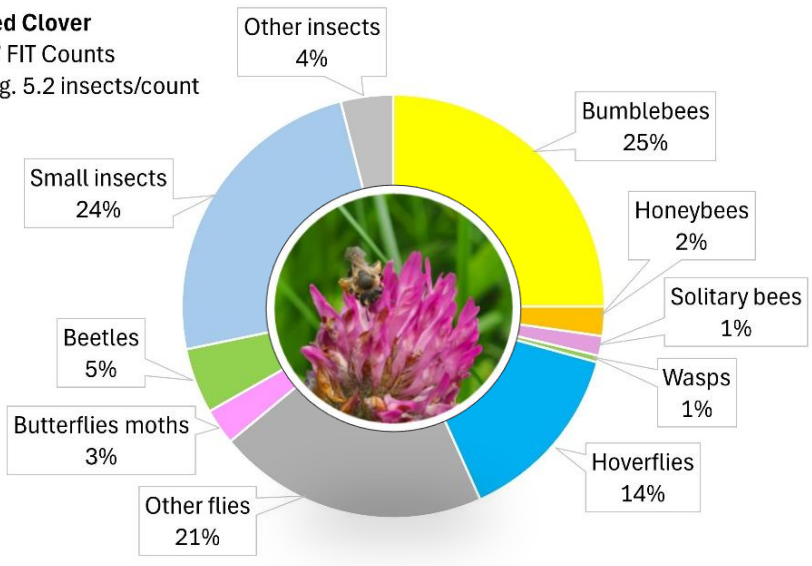
Buttercup
113 FIT Counts
Avg. 4.8 insects/count



Other flies, small insects and hoverflies were the most common insect visitors to buttercups.

Buttercups have an open flower structure making it easier to access pollen and nectar for insects with short mouthparts

Red Clover
77 FIT Counts
Avg. 5.2 insects/count



Bumblebees were the most common visitor to Red Clover in 2025 and accounted for 19% of records in 2024.

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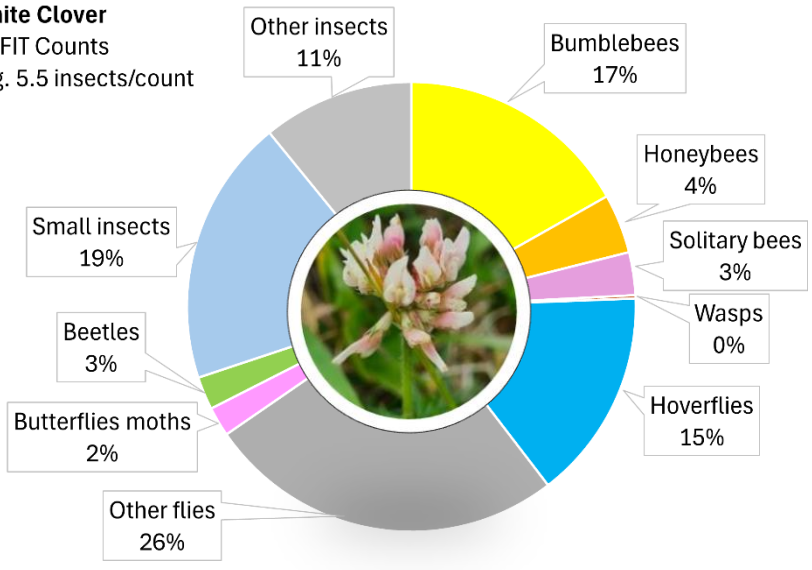
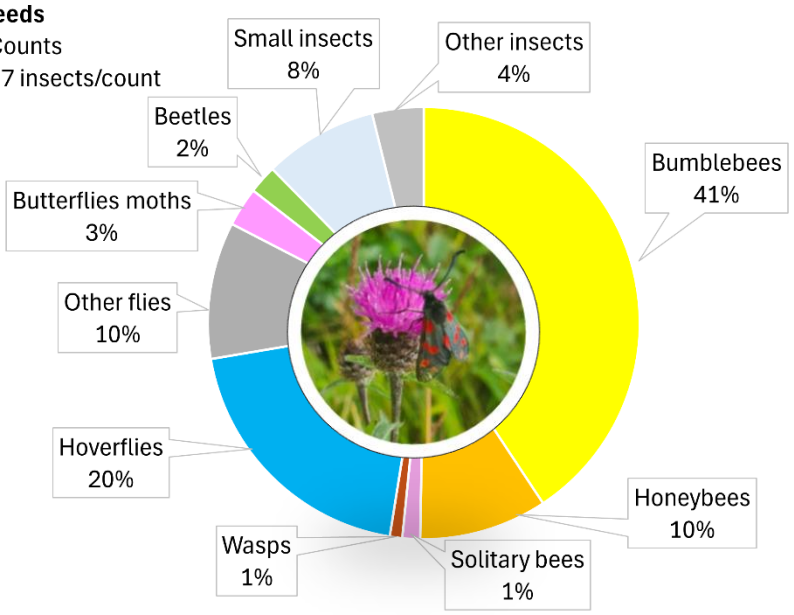
White Clover
77 FIT Counts
Avg. 5.5 insects/count



Bumblebees accounted for 17% of visits to White Clover in 2025 whereas they only made up 13% of visits in 2024.

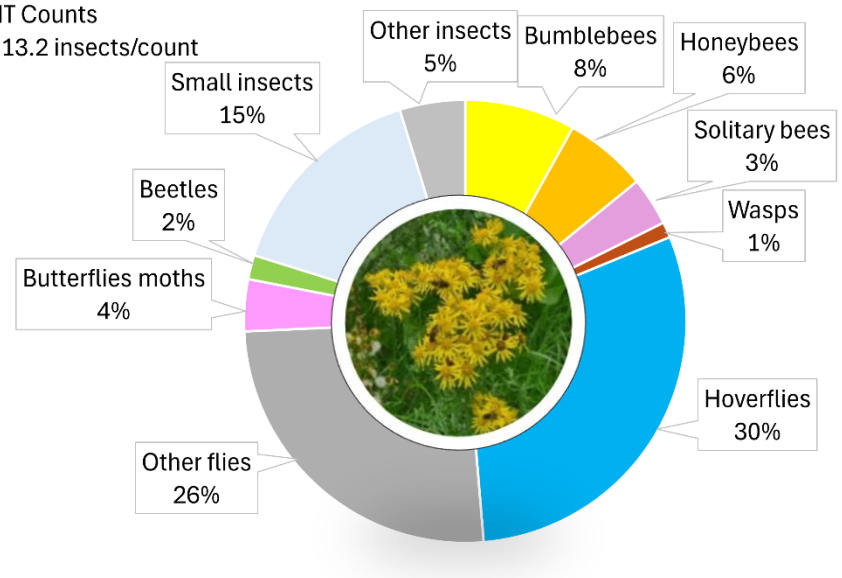
Knapweeds
70 FIT Counts
Avg. 10.7 insects/count



Bumblebees were by far the most counted group visiting knapweeds in 2025 followed by hoverflies. Together, both groups account for over 60% of visits.

Knapweeds bloom from June to September and are an important late-summer resource for pollinators

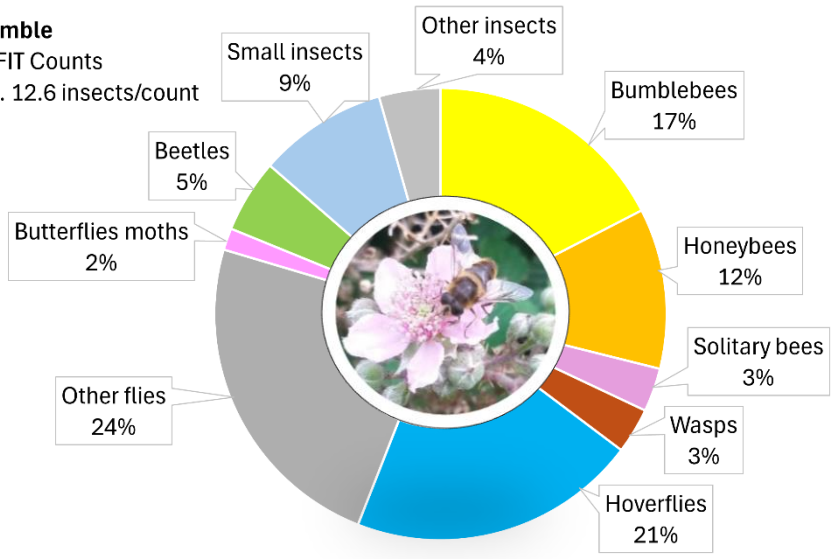
Ragwort
60 FIT Counts
Avg. 13.2 insects/count



Ragwort had a high average number of insects per count and was visited by all insect groups.

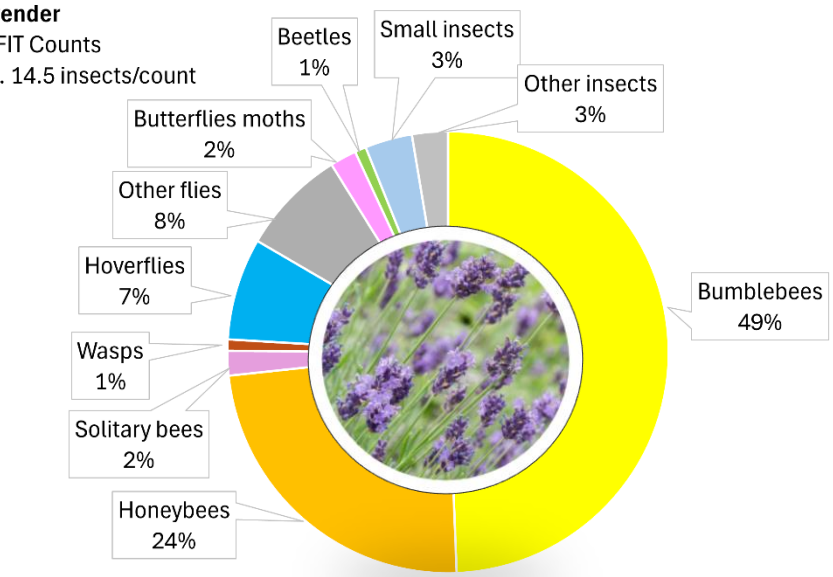
https://biodiversityireland.ie/surveys/fit-counts/

Bramble
56 FIT Counts
Avg. 12.6 insects/count



Bramble had a high average number of insects per count with flies (other flies and hoverflies) accounting for 45% of the insects visiting.

Lavender
50 FIT Counts
Avg. 14.5 insects/count

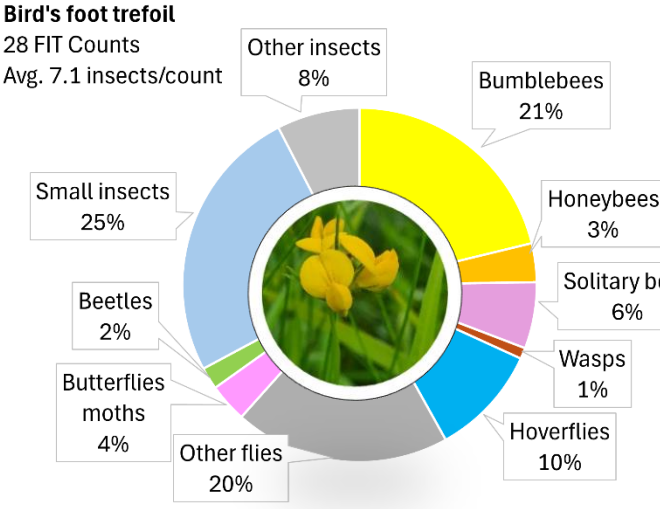


Bumblebees accounted for just under 50% of all visits to lavender in 2025.

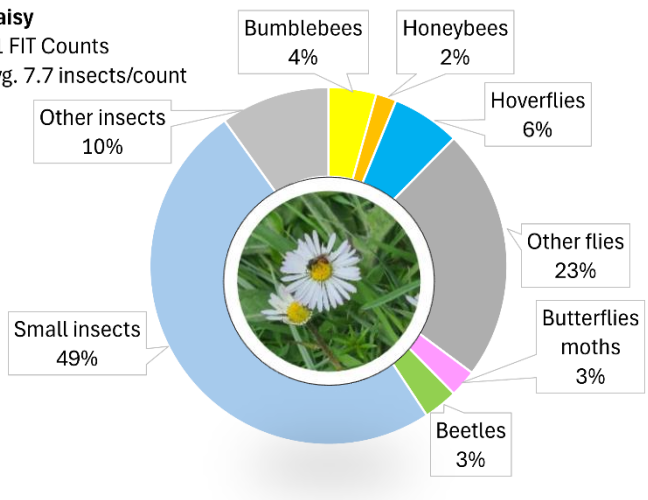
The flowers are tubular in shape so insects with longer tongues like bees can easily access the pollen and nectar

The previous eight target flowers are all target plant species. Below are two plant species in the ‘other’ non-target category that received the highest visits in this category. In both cases, you can see the high visitation rate by small insects. Bumblebees also accounted for 21% of visits to common bird’s foot trefoil.

Bird's foot trefoil
28 FIT Counts
Avg. 7.1 insects/count



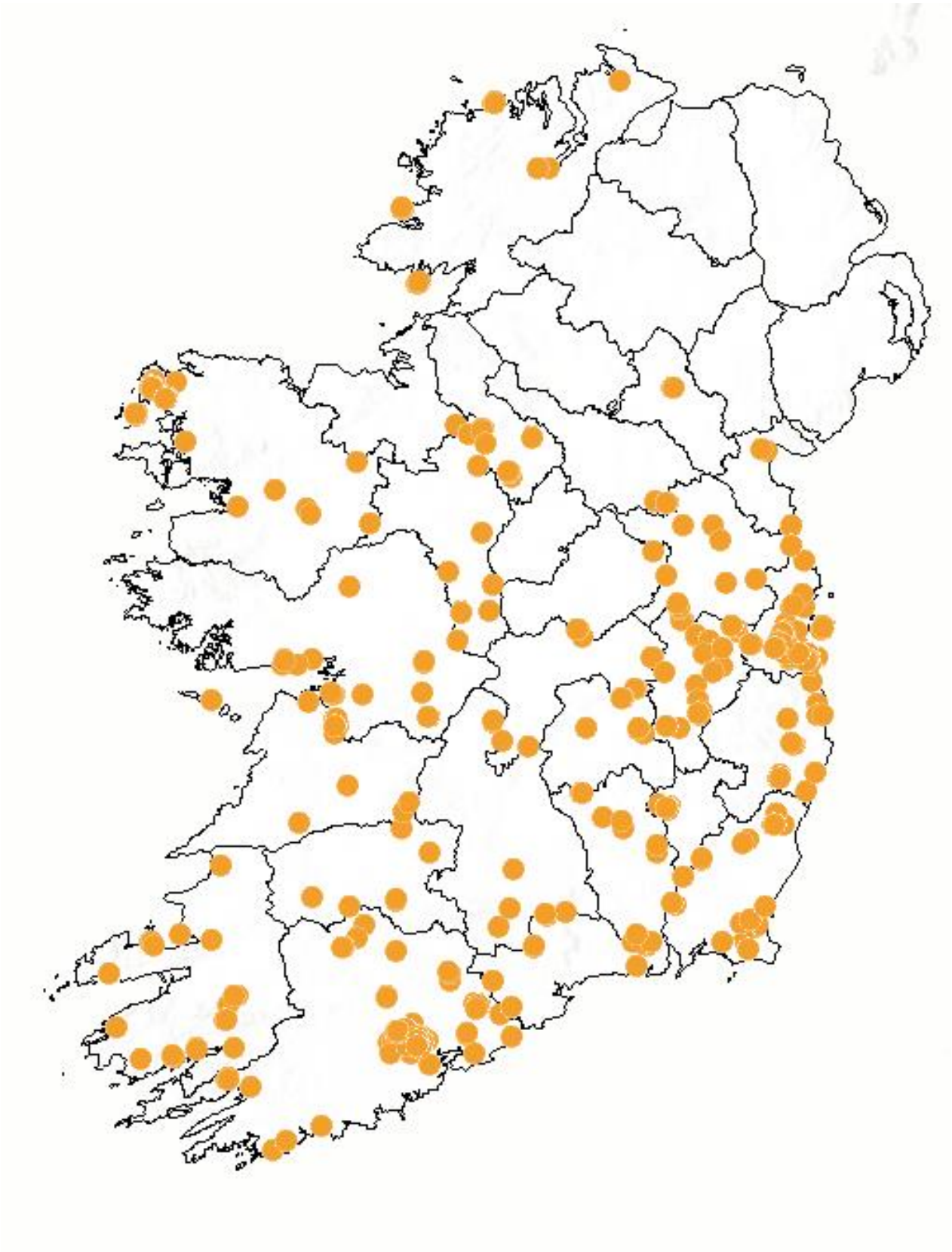
Daisy
21 FIT Counts
Avg. 7.7 insects/count



Other target flowers not presented due to low numbers of counts are: Heathers, Hogweed, Buddleja, Hawthorn, Ivy, Thistles, White Dead-nettle.

https://biodiversityireland.ie/surveys/fit-counts/

Map showing the locations of all 1,323 FIT Counts conducted in 2025



We would like to express our thanks to everyone who submitted FIT Counts during 2025. Your continued efforts and support will help assess changes in the numbers of flower visiting insects

https://biodiversityireland.ie/surveys/fit-counts/

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Hints and tips for 2026

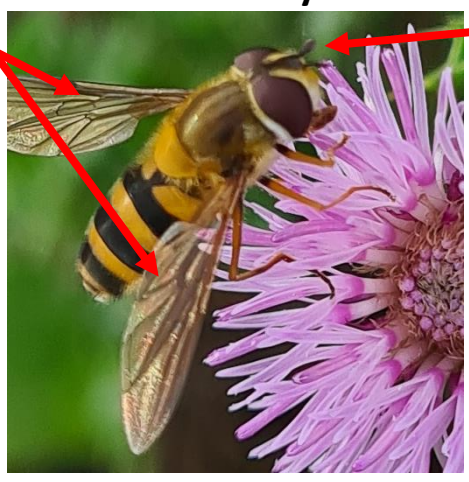
These are based on issues we noticed when validating the 2025 data. We are extremely grateful to all volunteers for their generosity in taking part in this scheme and want to ensure that as much of the data can be used as possible. We do want to stress that the vast majority of the data submitted was excellent.

- ✓ FIT Counts should only be carried out from 1st April until the 30th September.
- ✓ You must provide your full name. This is a mandatory data field for biological records.
- ✓ During the FIT Count, focus on only **one flower species** at a time even if there are multiple species within your plot. This ensures we can link all the insect visits observed during a FIT Count to a specific flower species.
- ✓ To carry out a FIT Count **your plant must be flowering**. You can't include unopened flowers, dead flowers or seed heads.
- ✓ Take care to correctly identify the target flower. In 2025, the most common error was other yellow flowers recorded as Dandelion. Lots of plants to do look like it, but Dandelion has a distinctive hollow stem.
- ✓ It would be unusual to get extremely high total insect counts in ten minutes. Make sure you only count each individual insect once. If a hoverfly flies into your square and lands on a target flower, that counts as one hoverfly. If it moves to another flower within the square that does not count as a second hoverfly.
- ✓ Hoverflies can also be a little tricky to tell apart from other insects. However, there are several ways to distinguish between hoverflies and other insects;
  - ✓ Fast fliers and can hover in the air (other flies, wasps and bees do not hover)
  - ✓ Large eyes that cover most of their head (eyes of bees and wasps are to the side of the head)
  - ✓ Antennae are short and stubby whereas bees and wasps have long antennae
  - ✓ Hoverflies have no thick bristles on their body when compared to other flies
  - ✓ Have one pair of wings (bees and wasps have two pairs of wings)

Hoverfly

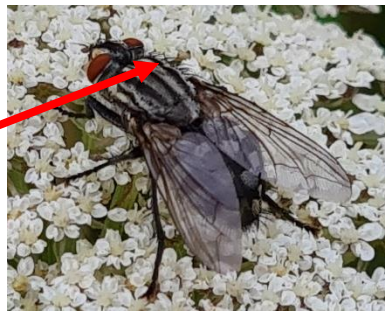
One pair of wings

Short antennae



'Other fly'

Thick bristles on body



Frequently asked questions

What happens to the data?
FIT Count data is stored in a dedicated database within the National Biodiversity Data Centre. All data is validated before being analysed and overview information presented in this annual newsletter. Both the app and the online recording form have the option for you to download your own data at any time.

How will the data be used?
The FIT Count methodology was developed by UK CEH. We thank them for their generosity in sharing resources. Over time we hope the data will be used to track changes in flower visiting insects both nationally and at more local scales.

Why are volunteers directed to the 15 target species?
Trend analyses require standardised data collection at large scales. Within FIT Counts, the easiest way to do this is to direct people to the same flowers across the country. The 15 flowers were carefully chosen to represent common flowers from different habitats that are important for pollinators. It is useful to submit FIT Counts from any flower attracting insects, but we encourage you to use the target flowers where you can. This helps us collect enough data to more accurately understand trends.

FIT Counts are used within the National Pollinator Monitoring Scheme
The National Pollinator Monitoring Scheme began in 2022. It involves paid surveyors monitoring pollinating insects across a fixed network of over 40 sites annually. They use various methodologies to monitor pollinators, including FIT Counts. In 2025, 27% of the FIT Counts were submitted through this scheme.

I struggle to identifying the different types of insects
For beginners this can be difficult and we simply ask you to try your best. There is a guide to the different insect groups on the website, and a guide built into the app. All data is validated before being used in analyses, so we are likely to spot unusual counts. Within 2025, the most common error was incorrectly identifying hoverflies.

Can FIT Counts be carried out in schools?
Yes! They are a great way to monitor the impact of any actions you have taken to make the school more pollinator friendly. We would ask that there is some adult supervision to help us ensure data quality.

How can I maximise the value of my FIT Counts?
If you can carry out multiple counts e.g., once a month or even once a week during the year that would be fantastic and will add value to your data. The most useful counts are those that are repeated over time at the same location (or very nearby). You can use different target flowers at different times of year.

Can I take part?
Yes, we are always grateful for new volunteers. You can do FIT Counts at any time from April to September.

This scheme is managed by Dr Michelle Larkin.
Citation*: Flower-Insect Timed Count Scheme – 2025 Newsletter.* National Biodiversity Data Centre, Waterford.

How to submit FIT Count data

FIT Count App

The easiest way to submit FIT Count data is to use the free App that was developed in 2022. It allows you to carry out a FIT Count and upload the results in one go.

Download Android app from Google Play
Download Apple (iPhone/iPad) app from the App Store

Features include:

- ✓ All FIT Count data can be entered in the field – no internet signal required
- ✓ Counts can be uploaded immediately if you have data/Wifi. They can also be stored within the app for upload when you return to base
- ✓ Includes insect groups identification guide
- ✓ Can use device GPS to automatically record your location

Note: If you do not have internet in the field, the initial map will appear blank, but it does still work if your location is on.

Once your Counts have been saved and uploaded, you will be able to view them via this website: https://fitcount.ceh.ac.uk If you need to edit your Count after uploading from the app, you will need to register on this website, using the same email address that you used to register on the app. You can also download your own FIT Count data from the website. All data submitted from Ireland is directly available to the National Biodiversity Data Centre. We express our sincere thanks to the UK Pollinator Monitoring Scheme and to the EU SPRING project who developed a version of the app for use within Ireland.

Submitting data online

If you prefer not to use the app, you can print out a recording form from the website, take a photo of your target flower, and submit the data online at: https://records.biodiversityireland.ie/record/fit-count

Northern Ireland

FIT Counts in Northern Ireland are managed through the UK Pollinator Monitoring Scheme https://ukpoms.org.uk/