

The Big Butterfly Count (Britain): For many in the UK, 2024 was the year without a butterfly

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The Big Butterfly Count reported its worst results in 14 years of monitoring UK species.

Contents

- [What is to blame?](#)
- [What next?](#)

Small tortoiseshell butterflies had their worst year on record. HWall/Shutterstock

The charity behind the world's largest butterfly survey has declared [a national emergency](#).

Butterfly Conservation's annual Big Butterfly Count, which started in 2010, asks people in the UK to tally the number of butterflies and day-flying moths they see. Over 85,000 volunteers recorded their sightings in 2024, over 25 days between mid-July and early August when conditions for spotting butterflies are usually best.

The results are in. This summer saw the lowest average number of butterflies per 15-minute count in the survey's 14-year history: seven, down from 12 last year. A third of species had their worst summer on record, while more than 9,000 counts reported no butterflies at all.

Comparing butterfly numbers between years is tricky, especially if you only cover part of the season. Some species fly early in the season, others emerge later. Cold weather can delay the development of larvae and reduce butterfly activity while hot and sunny weather can speed it up. This means that the peak of butterfly abundance shifts between years depending on the weather.

A survey limited to part of the season may miss this window. One way of avoiding this problem is to have regular counts throughout the entire season. This is what monitoring schemes such as the [UK butterfly monitoring scheme](#) do.

The Big Butterfly Count, meanwhile, runs over 25 days when data shows that butterfly activity and abundance usually peaks, even in fairly cool and wet summers like 2024. Tens of thousands of enthusiasts count intensively during this period.

More than 140,000 counts were recorded this year. Because of the sheer amount of data, I would say that the low number of butterflies in 2024 - by far the lowest ever - shows a very serious result indeed. Previous years had their dips, but this is on a scale not seen before.

Any given year could be a bad year for butterflies just by chance. But pay attention to the trends in the report. Eleven species (65% of all) are decreasing and only three (11%) have increased over the

last 14 years. This fits with what other schemes in the UK and continental Europe have found.

The [European butterfly monitoring scheme](#) combines [the population trends](#) of 17 species, several of which, including the Meadow Brown and the Common Blue, are also tracked by the UK's Big Butterfly Count. This combined analysis starts with 1990, and shows a steep decline in population densities of these butterflies during the first ten years, a more stable period for ten years and then a 36% decline between 2010 and 2020.

What is to blame?

Caterpillars need plants to eat and adult butterflies need nectar. Unfortunately, much of the habitat where butterflies could reliably find these things is now intensively managed. Farmland weeds are fought with efficient herbicides, insecticides can harm butterflies even when they are not the target.

It is not just intensive land management that hurts butterflies. Valuable habitats, such as flower-rich grasslands, are abandoned when farming is no longer economically viable and can turn into shrubland or forest.

Pesticides are used to control crop pests, but can kill many types of wildlife. Olko1975/Shutterstock

There is good evidence from the UK and from [research I have done in Sweden](#) suggesting these factors contribute to the decline of butterflies, and they often interact. Favourable habitats become smaller and more isolated from each other and the [work to counteract this](#), by connecting those habitat patches, needs to be well planned.

Unfortunately, there is a new problem growing in importance. Fragmented butterfly populations are increasingly vulnerable to extreme weather, drought in particular. The last few years have seen reoccurring droughts in the UK and most of Europe.

When plants wilt during a drought, both caterpillars and butterflies struggle to forage. If the entire population is split into isolated fragments then climatic extremes can threaten its long-term persistence.

A drought in Sweden in 2018 led to the regional extinction of [two butterfly species](#) and a drought in 2023 led to [another](#). The declines shown by the Big Butterfly Count are worrying because they indicate smaller and scattered populations that are increasingly vulnerable to a more volatile climate.

What next?

In the life cycle of butterflies, there is a sequence from eggs to caterpillars, to pupae and finally, to adult butterflies. If there is a bad year for adult butterflies (or any life stage), that will affect the subsequent stages.

A low number of butterflies in 2024 makes it likely that fewer eggs will have been laid. As a result, we can expect fewer butterflies in the next generation. This happened in the UK after a drought in 1995, when ringlet butterfly populations [crashed the following year](#). It took several years for the species to recover.

We saw the same thing with ringlets in Sweden after the 2018 drought. This butterfly is now almost

back to its pre-drought abundance as the most common species in Sweden.

Butterflies tend to prefer certain plants to lay their eggs on. Tomasz Klejdysz/Shutterstock

There are more hopeful scenarios too. Butterflies are capable of impressive recoveries, as they can lay lots of eggs. The marsh fritillary, a brown butterfly found in wetlands, [can bounce back](#) from a drought if there are well-connected habitat patches.

Some of the worst predators of butterfly caterpillars, parasitoid wasps, also suffer when their food is scarce. Fewer caterpillars means fewer wasps, releasing the next generation of butterflies from some of the risk of attack.

One last reflection, and probably the most important of them all. Research like the Big Butterfly Count shows that involving the public in nature conservation can work. The survey [encourages](#) those involved to help restore natural habitats and help butterflies and moths. More than 85,000 butterfly enthusiasts across the UK participated in an endeavour to understand, help and enjoy butterflies. That, if anything, is promising.

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Using historical data, Pettersson collaborates with Swedish and German colleagues to explore nationwide colonisation patterns of Swedish Lepidopterans and relate these to species-specific traits



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