



2022 Garden Butterfly Survey Data Report

Almost 1400 gardens participated last year, just under 500 of these were existing surveyors reregistering, and almost 900 gardens were newly registered compared with 2021. 450 previous surveyors who submitted in 2021 did not submit records in 2022. Our autumn newsletter poll: **Missing Garden Butterflies** showed that 55% of respondents were still to submit data, 34% hadn't surveyed at all and 8% surveyed but didn't see any butterflies. It's never too late to take part, the survey runs all year round and you can still submit your 2022 sightings. If you need help, please do contact us via our dedicated Garden Butterfly Survey inbox gardenbutterfly@butterfly-conservation.org.

In 2022 our gardens hosted 135,645 butterflies of 48 species (-5 on 2021), observed over 27,851 surveys. Of the 1358 recorders that took part, 44 surveyed more than one garden. The first sighting of the year was of a Brimstone recorded on the 1st of January 2022 and the last a Red Admiral on 27th December 2022. The highest number of surveys submitted from one garden was 201 from a garden near Crowcombe in Somerset. The average number of surveys was 20 per garden and 413 gardens submitted only one survey. The garden with the highest number of species was near Northwood Derbyshire, which enjoyed a total of 27 species, whereas 168 gardens saw just one species. Our new recording option 'Unidentified White' was used by 20% of surveyors, submitting 1939 records.

Species Results

2022 was a disappointing year for butterflies, which was somewhat surprising given the long, hot summer experienced in many parts of the UK. Indeed, summer 2022 was the hottest on record with the highest temperatures exceeding 40 degrees. Several Garden Butterfly surveyors reported an absence of butterflies from their gardens and our analysis shows a significant reduction in occupancy, also reflected in the UK Butterfly Monitoring Scheme.

Small White was the most widespread occurring in 65% of gardens (-15% on 2021), Large White and Red Admiral came in second and third with 60% (-16% on 2021) and 58% (-18% on 2021) respectively. Common Blue was the only top 20 species to increase occupancy in 2022 (+8%).

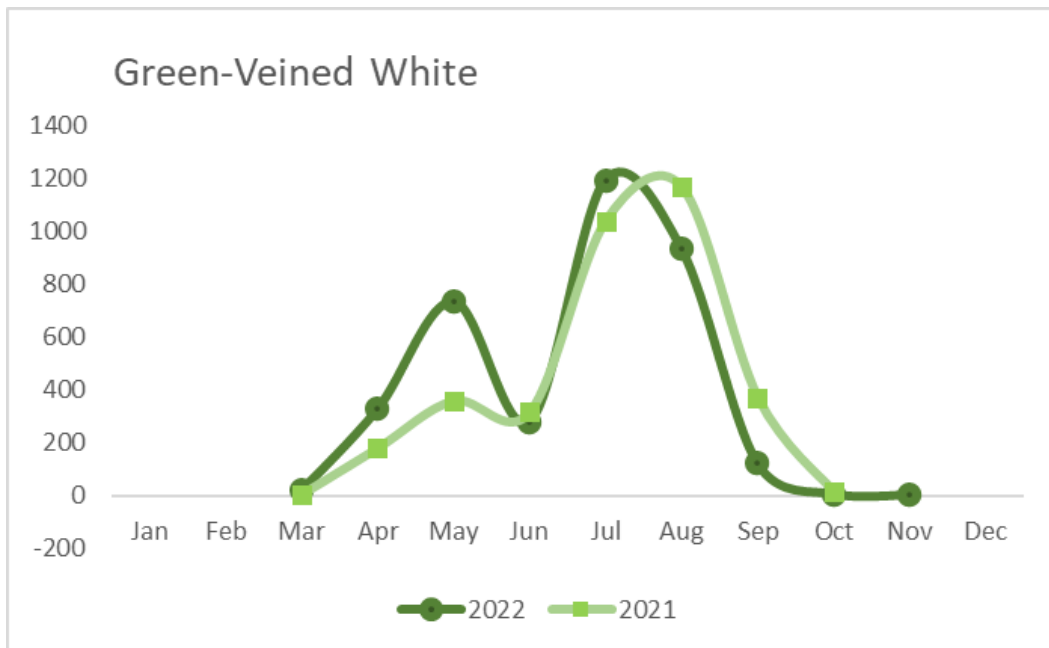


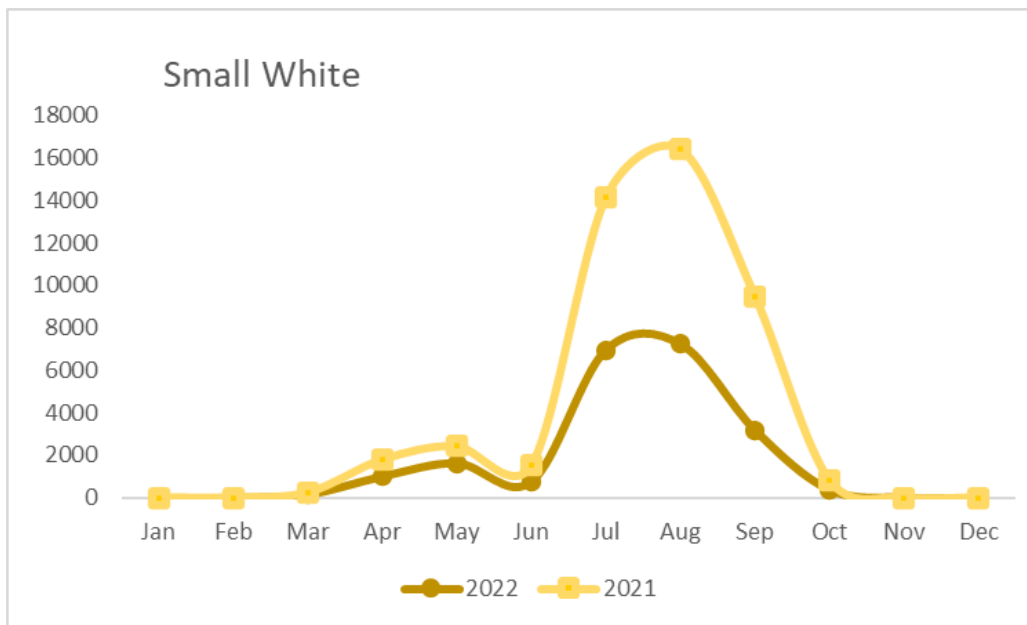
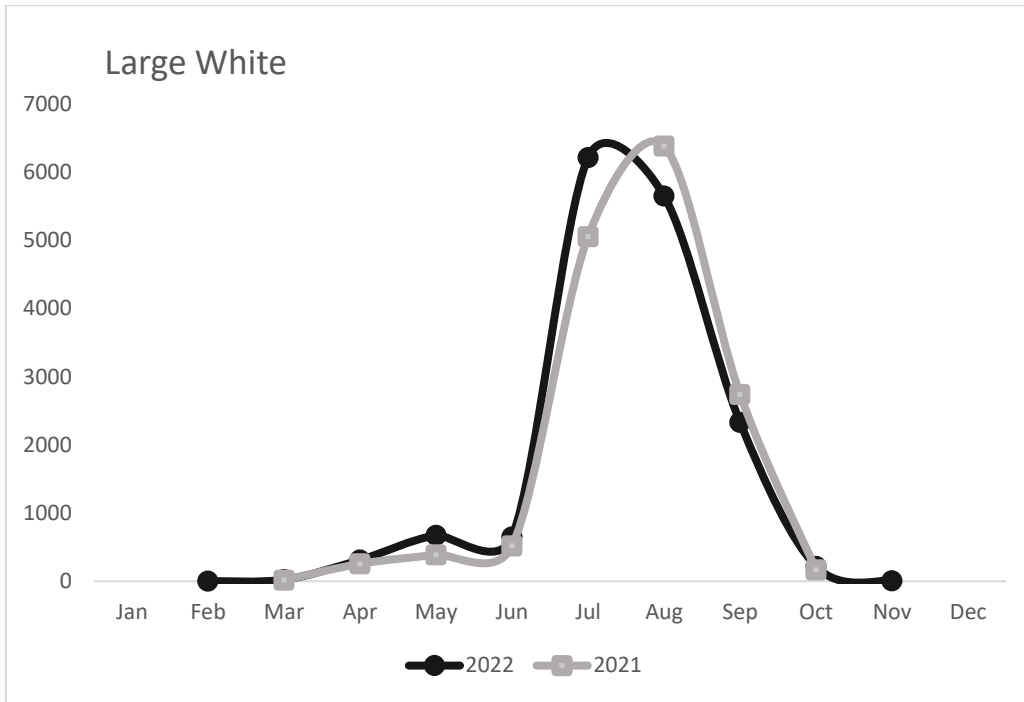
Common Blue CCO

Table 1. Comparison of occupancy of top 20 Garden Butterfly Survey species, 2022 and 2021

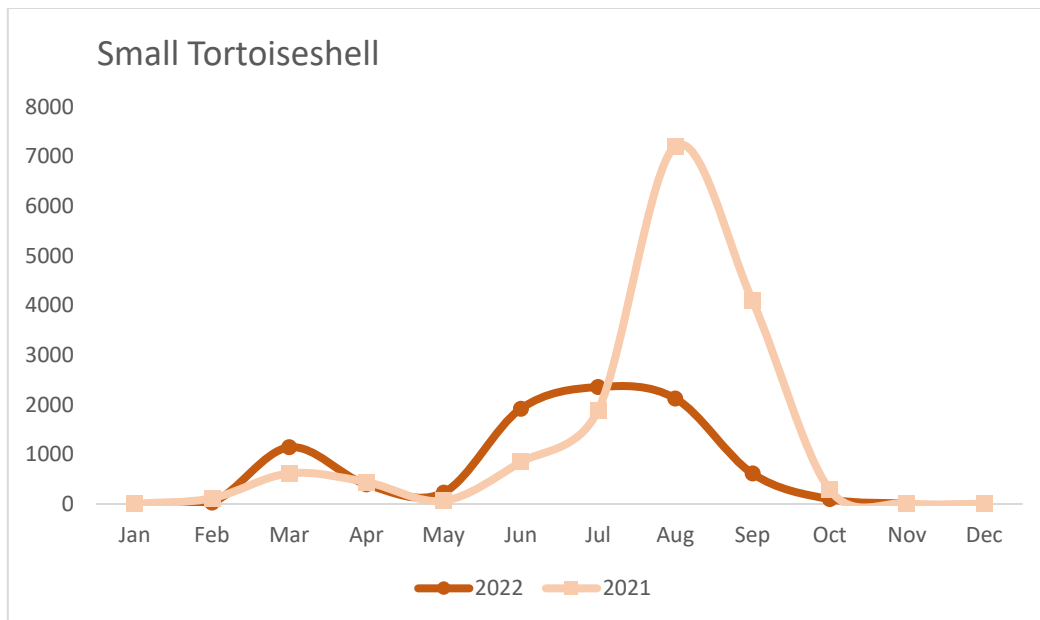
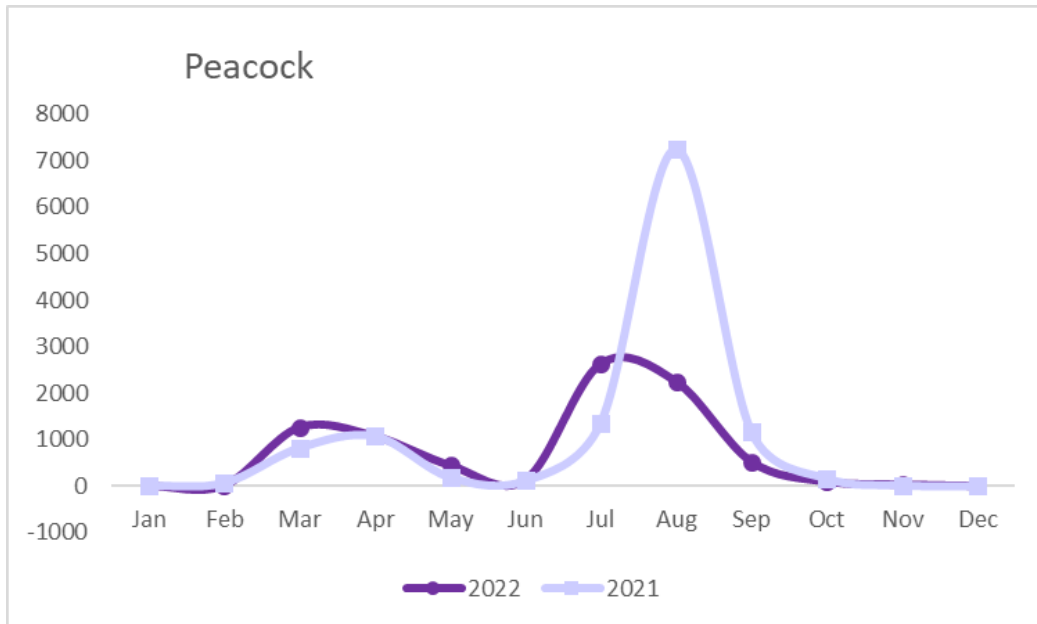
Species	Total Count 2022	% Gardens 2022	% Gardens 2021	% Change in 2022
Small White	11612	65	80	-15
Large White	9473	60	76	-16
Red Admiral	7236	58	76	-18
Peacock	5036	56	77	-22
Small Tortoiseshell	5659	55	69	-13
Comma	4150	50	58	-7
Holly Blue	5501	47	58	-11
Speckled Wood	4143	45	48	-3
Orange-tip	2508	43	55	-13
Meadow Brown	4267	42	54	-12
Brimstone	3137	41	54	-13
Gatekeeper	3931	39	55	-17
Painted Lady	1675	34	46	-12
Green-veined White	2578	32	42	-10
Common Blue	1480	27	19	8
Ringlet	1221	23	30	-7
Small Skipper	619	15	18	-3
Small Copper	689	15	20	-6
Large Skipper	350	9	12	-3
Marbled White	290	8	11	-3

One effect of the extreme summer weather was a premature end to the flight period of many species. For example, the summer generations of Green-veined White and Large White peaked substantially earlier in 2022, leading to far fewer seen in gardens during the autumn. However, this was not the picture for the Small White, this species (the most widespread and abundant in 2022) showed a pattern of emergence in line with the previous year. However, summer brood numbers of Small White were half that of 2021, which likely accounts for the year-on-year reduction in occupancy of this species.

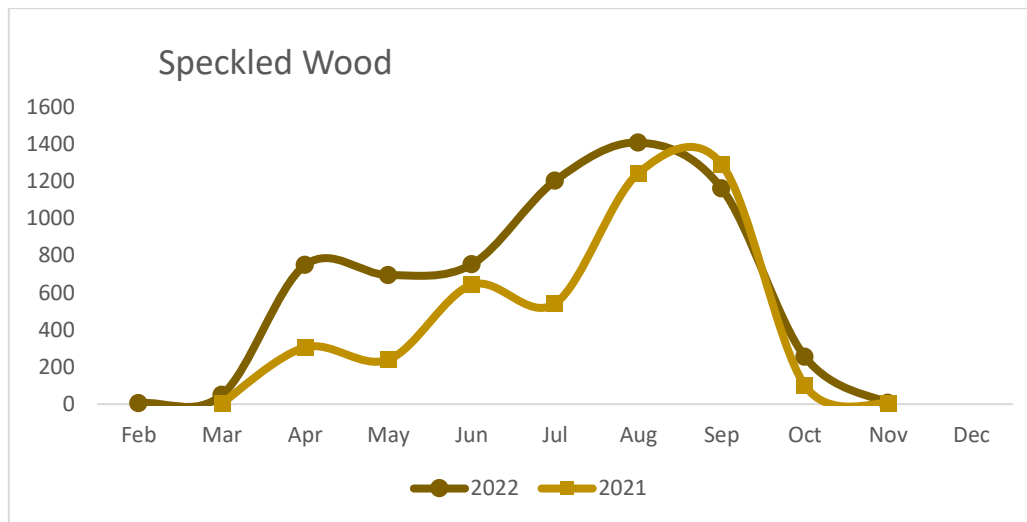




Peacock didn't have a very good year, although the spring emergence was generally the same as 2021, the second generation peaked significantly earlier with lower numbers in comparison. Small Tortoiseshell fared similarly, with a substantially earlier second generation which plateaued rather than peaked over the summer months.



Above average temperatures over winter 2021-2022 appeared to give the first emergence of Speckled Wood an early boost, with good numbers evident right through to the summer brood; peaking almost a month earlier than in 2021. The species also experienced the lowest decline in occupancy of -3% on 2021. Early GBS sightings in February, were reflected in iRecord with a confirmed Cardiff sighting on the 14th January by BC's Senior Ecologist George Tordoff



Any negative impacts of the extreme summer weather won't be fully evident until later this year, when we are able to assess 2022 breeding success. Whilst adult butterflies can withstand high temperatures, simply seeking out shelter in extreme heat, drought can significantly impact the survival of their offspring. In very dry conditions butterfly eggs can be killed by drying out, ending the life cycle. Should hatching be successful, caterpillars emerging in a drought face potential starvation from a lack of fresh green plants on which to feed. In a normal summer, species using gardens may fare better as they can avail of foodplants kept hydrated by watering, but with hosepipe bans in place in some areas during 2022, this advantage will have been lost. Buildings, fences and other manmade structures can create micro-climates which may better support butterflies during a drought, while pruning plants can maintain a constant supply of new growth. We want to use Garden Butterfly Survey data to answer questions such as these and by taking part in GBS in 2023, you can play an important part in assessing the ongoing fortunes of butterflies in UK gardens. So please survey regularly and survey all year round.

Many thanks to everyone who took part in the Garden Butterfly Survey in 2022. Wishing you the best for the season ahead and we hope you see and record lots of butterflies.

The Garden Butterfly Survey team

Acknowledgements

Our work to renew the Garden Butterfly Survey is part of Supporting Science. This project will improve data flow and better support our recorders and volunteers. We will improve access to natural heritage and grow digital skills by developing tools and collaboration. This project received DCMS and National Lottery funding, distributed by The Heritage Fund as part of their Digital Skills for Heritage initiative. We are also grateful to Henry C. Hoare Charitable Trust, Sophia Webster Ltd. and The Lochlands Trust for their support.



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