

Partial broods in 2025 – an extraordinary year

In 2025, Sussex was blessed with six months of glorious weather between March and August. The spring was the warmest and sunniest on record, and the month of June was also the warmest-ever recorded. It was also very dry during these six months, but in my part of West Sussex there was heavy rain on a couple of days and that was just enough to prevent significant desiccation of the native vegetation. The near-drought conditions did not seem to have any adverse impact on butterfly breeding cycles, but we must spare a thought for the farmers (and gardeners) who struggled with the lack of rain.

Our native butterflies took full advantage of these weather conditions and several species responded by producing a “partial brood”. The purpose of this article is to highlight these events, but also to lay down a marker for future reference, so that we can monitor the impact of climate change on our Sussex butterflies. What were very uncommon events, in 2025, may be commonplace in 10-15 years’ time. We shall see.

I will write about four species: White Admiral, Green-veined White, Adonis Blue, and Brimstone.

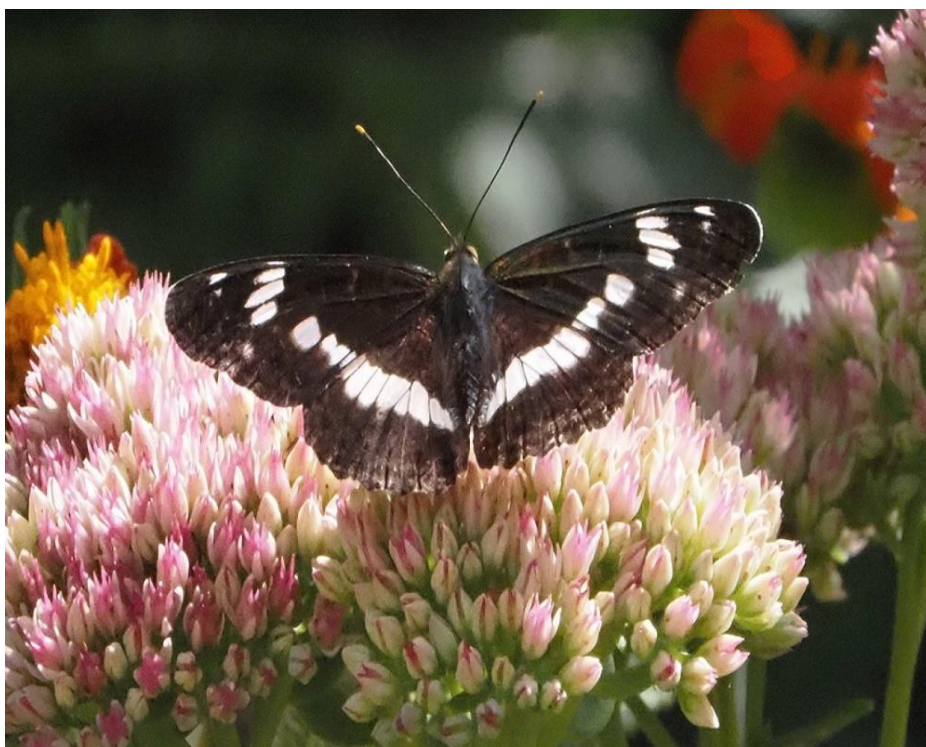
White Admiral

In the website years, 2006-2024, the average date for the first sighting was June 17th (range June 2nd – June 29th). In 2025 the first sighting was on June 9th, which was the third earliest sighting in recent times, with only 02/06/2011 and 08/06/2018, earlier.

White Admiral clearly had a good season, with many notable posts. There were 18 seen in the Southwater Woods on June 15th, six at Abbot’s Wood on the 16th, with “lots of White Admirals” at Knowlands Wood, on the same day. On the 22nd there were three at Abbot’s Wood, and “lots in the sunny glades” of the Wiston Woods. On the 29th there were 15 at Woodhill Copse, West Chiltington, and at least five at Knowlands Wood. On a personal note, I had two different singles visit my Storrington garden on July 10th and 13th (just one previous garden record on 18/07/2021) and Lindsay Morris had a “garden first” at Lancing, taking his running total to 34 garden butterfly species (since 2014).

To summarise, this species emerged early and had a very good season, with commendable numbers found in their usual woodland haunts.

As for the partial second brood, there was one seen (and photographed) at Manor Gardens, Eastbourne on 09/09/2025. A partial second brood is well-recognised in Sussex, and to quote from A Revised History of Butterflies and Moths in Sussex – by Colin Pratt: “It episodically flies from early September to the third week in October, usually after particularly early first emergences”.



White Admiral, Manor Gardens, Eastbourne - photographed on the September 9th by Maurilio Tesa (submitted by Douglas Neve)

There were records in 1926, 1933, 1943, 1946, 1947, 1976, 1984, 1995, 1996, 1997, 2004, 2006, 2012, 2016, 2019, 2020, 2023 and now 2025. It can be seen that a partial second brood was very uncommon prior to 1994 but with 11 records in the past 30 years we can expect a Sussex record, approximately every three years.

Discussion

For these four butterfly species I have begun with White Admiral, as an occasional, partial second brood is a well-recognised event. It doesn't happen very often and for most of the 20th century it occurred approximately every 10 years, but since 1995 the records have increased to more-or-less every three years.

Green-veined White

In 2025 the first sighting was on March 26th which was eight days earlier than an average date of April 3rd (range February 18th - April 20th). Emergence was early but it was not an exceptional date, for if we have a sunny, warm spring, a Green-veined White is likely to be recorded somewhere in Sussex, in the last 10 days of March.

In 2025 there were several early sightings, with records at Crawley, North Stoke and Hailsham on March 26th, at Wiston and Friston Forest on the 30th, and at Lancing Ring on the 31st. These early sightings were followed by unusually large numbers in the Arun Valley, with 15+ at North Stoke on April 6th, and 20 at North Stoke/Burpham Meadows on April 11th. Away from the North Stoke area there was just one spring record of note, with 7-8 recorded

at Goring Seafront, on May 2nd. A distinct lack of records after May 22nd meant the first breeding cycle was effectively over, with just a few stragglers remaining.

For many butterfly species, deciding when one brood has finished and another one has begun, is far from straightforward, but a record of a very large female, on June 12th, dispelled any doubts that the second brood had begun. Notable counts for this second brood included six at Wiston on June 20th, five at Houghton Forest on July 3rd, 13 at Blunts Wood, Cuckfield on July 6th, nine at an undisclosed “Purple Emperor” wood in East Sussex, on the 13th, and six at Abbot’s Wood on July 26th. In the last few days of July there was just a trickle of singles, and it seemed likely that the second brood was coming to an end.

A small surge of activity on August 5th suggested the beginning of the third brood. There were four at Lancing Ring and three at Polegate, and this was followed by eight on the Amberley Downs on the 7th. There was a very large count of 31 at Friston Forest on August 10th and six at Weir Wood Reservoir on the 11th. At Lancing Ring, there were six on the 14th, seven on the 19th and five on the 24th, and at Abbot's Wood there were 11 on the 26th. At Lancing Ring there were five on September 5th, and at Abbot’s Wood there were seven on the 7th, and five on the 16th. The Amberley Downs and Rowland Wood had two apiece, on the 19th. There were singles at Chantry Hill and Lancing Ring on September 22nd, and that was the end of the third brood.



Fourth brood Green-veined White in the Lancing area – photographed on 02/11/2025 by Lindsay Morris

A fresh female Green-veined White was photographed by Lindsay Morris at Lancing Ring on November 2nd. A Green-veined White has never previously been recorded in November, and therefore this was a “Sussex-first”. As there was a gap of 41 days between the end of the third brood and this November 2nd record, I think we can be very confident that it was a

fourth brood individual. Subsequently, Lindsay Morris recorded two more Green-veined Whites at Lancing Ring on November 8th.

Discussion

In ideal conditions, the breeding cycle of a Green-veined White is around six weeks. On emergence the females are likely to mate on the same day and then begin laying eggs within 2-3 days. The eggs take 5 days to hatch, whilst the whole of the larval stage only takes three weeks. The pupal stage takes another ten days, and then a fresh butterfly emerges. It is a remarkably short breeding cycle but given the unpredictable nature of the British weather these ideal conditions rarely prevail in the UK and the figures stated are only likely to apply to the second brood in a favourable year. The breeding cycle is likely to be longer in the spring and autumn when cool nights will slow things down.

For 2025, the start of the first breeding cycle of Green-veined White was likely to be within a few days of its emergence on March 26th. There is usually a short gap between the male and female emergence and allowing for this, it is likely that breeding was well underway, by the first week of April.

The beginning of the second brood may be easy to date, provided there is photographic evidence of a second brood, and fortunately this was the case in 2025, when a female photographed was on June 12th.

I believe the beginning of the third brood can be calculated from the records. There were singles reported from five locations, between July 27th – 30th, and then between July 31st and August 4th the website received 21 posts but there were no records for this species. The flurry of activity on August 5th suggested the beginning of the third brood, which then finished on September 22nd.

I have no doubts this was a fourth brood Green-veined White, which was “a first” for Sussex and quite possibly “a first” for the UK.

Adonis Blue

In Sussex, Adonis Blue is double-brooded and typically has a flight period from early May to the end of September. For the website years of 2006-2024 the average “first sighting date” was May 7th and the average “last sighting date” was September 28th. In 2025, this species was first recorded on April 28th and last recorded on August 30th.

As a result of climate change many butterfly species are emerging earlier and quoting from The Butterflies of Sussex: “The average flight period between 2010 and 2014 was 7 May to 30 September. The Adonis now first emerges about two weeks earlier than it did during the early 1990s”.

In 2025, April 28th was an early date but there have been other April emergences in recent years, as follows: 24/04/2007, 26/04/2011, 30/04/2017 and 30/04/2022. An early start will probably result in an early finish, if the weather is kind, and in 2025 it was warm, sunny and glorious. The final Sussex records for the first brood were at Mill Hill when there were 16 on

June 2nd, but only single stragglers on June 16th and 30th. It seems likely that the Mill Hill colony was largely over by June 10th, or thereabouts.

The second brood emerged on the astonishingly early date of 17/07/2025. This compares with the dates for the past 10 years, as follows: 09/08/2015, 12/08/2016, 24/07/2017, 27/07/2018, 01/08/2019, 05/08/2020, 12/08/2021, 29/07/2022, 09/08/2023 and 09/08/2024. For these dates, an “average first sighting date” for the second brood was August 4th, and therefore, in 2025, it was 18 days earlier than average.

As regards the breeding cycle of the second brood, the same rules apply as for the first brood, if the cycle begins early, it is likely to finish early. And that’s what happened. There were website records for Adonis Blue on August 22nd, 23rd, 24th and 25th, and none after that, until Bob Eade spotted a fresh third brood male, at Greenway Bank, Seaford, on October 9th, some 45 days later.



Third brood Adonis Blue at Greenway Bank, Seaford – photographed on 09/10/2025 by Bob Eade

I will keep the narrative above, as that is what I wrote at the time, but subsequently I learned from Bob that he had a record of 10 Adonis Blues at Greenway Bank, Seaford, on August 30th, but with no sightings after that. The six months of glorious weather finished in early September, and it was very wet for a few days. Not only did that prevent us from doing any meaningful butterfly surveys, but it also meant that many butterflies would have struggled to survive the deluge. At any rate, there were no September records for Adonis Blue, when an “average last sighting date” is September 28th.

There were no records of second brood Adonis Blue for 40 days until the third brood male was recorded on October 9th.

Discussion

The first brood breeding cycle began in late April/early May and was over by around June 10th. The second brood cycle began exceptionally early on July 17th (or shortly, thereafter) and finished on August 30th (or shortly, thereafter). The very early completion of the second cycle allowed sufficient time for the emergence of a partial third brood on October 9th. It was the gap of 40 days without any records for Adonis Blue which clinches it, for me.

Adonis Blue records for September, or occasionally October, are not unusual. However, it is worth pointing out that these late records have not been subjected to any meaningful scrutiny and have been taken at face-value. Some of these late records may have been erroneous, as very faded males of Adonis Blue and Common Blue can be difficult to separate, as can the females of Adonis Blue and Chalk Hill Blue (both of which can fly late in the autumn months). Fortunately, on this occasion, we have a high-quality photograph to confirm the ID.

So, why couldn't this October 9th Adonis Blue be a very late second brood individual. For me, it's the combination of the dates and the sustained fine weather (until the end of August). It would mean that an egg laid in the second week of June took four months from egg -to- adult butterfly, and this delay affected just one egg and no others (for there were no records in September and early October). For me, that seems implausible.

A third-brood Adonis Blue is a Sussex first. Is it a UK first?

Brimstone

Brimstones hibernate as adult butterflies, but a warm, sunny spell in January or February, is likely to entice a few males to leave the safety of their winter hide-aways. In recent years there has been a succession of mild winters, and this has led to earlier sightings. In the years 2006-2024 the "average first sighting" was February 5th, but in the ten years between 2015 and 2024, the first sighting date moved forward to January 11th. That's a shift of around three weeks in just twenty years.

In Sussex, this species is fairly common, especially in areas of downland where Purging Buckthorn is widespread and plentiful. Over the past few years there have been large emergences of Brimstones in early spring, with notable examples: 40+ at North Stoke/Burpham Meadows on 20/04/2021, 25-30 at North Stoke/Burpham Meadows on 19/03/2022, 32 in the Amberley/North Stoke area on 07/04/2023, 15 at Pulborough Brooks on 12/04/2024, and 58 (34m & 24f) at Cissbury Ring on 30/04/2024. These very early large emergences tend to be exclusively males, with the females following ten days or so later, initially in one and twos, before their numbers build up and they become the dominant sex.

The spring of 2025 was so warm, it encouraged the very early emergence of large numbers of Brimstones, with 20 males seen at Lancing on March 9th, and 30 at North Stoke on March 20th (which also included 5 females). As March 20th was my first visit to North Stoke, and several females were already present, I rather suspect the North Stoke "male emergence" was a lot earlier, and probably the same dates as the Lancing record, say the 9th or 10th.

Recording several female Brimstones on March 20th was very unusual, and several weeks earlier compared to an average year.

Since the breeding cycle began very early it should be no surprise that the summer brood was also very early. At one very-closely monitored downland site the summer emergence began on June 19th, with large numbers recorded on June 25th. For the same location the main emergence in 2024 was July 26th, more than one month later.

After the summer emergence of Brimstones, it never seems to be too long before most of them disappear from view, to find somewhere to hibernate for the autumn and winter. In 2025, there were just three singles recorded after mid-August, on the 15th and 24th, and then on September 6th.

On September 19th there was an explosion of activity with ten on the Amberley Downs, nine at Rowland Wood, three at Chanctonbury Ring and two in my Storrington garden. That's 24 in total for the day. All 12 Brimstones that I observed that day were males, and they all appeared to be very fresh.



Second brood Brimstone, garden photo, Storrington - photographed on 19/09/2025 by the author

For the rest of September there were just five records, with two of them mine, as I was curious as to what might be happening on the Amberley Downs. At this site, there was a female on the 25th and three more (2m & 1f) on the 29th. On the latter date there were also two at Lancing Ring (1m & 1f) and a single at Cissbury Ring (1). On the 30th there was a single at Lancing Ring.

Discussion

In the UK, Brimstone has always been described as single-brooded, and I am not aware of any previous claims of a partial second brood. I believe in some locations on mainland

Europe, a partial second brood is recognised. Therefore, it can happen, just not in the UK, or so we thought.

In 2025, a mild winter was followed by the warmest spring on record. It was not only warm, but sunny and dry, providing ideal breeding conditions. Large numbers of Brimstones emerged several weeks earlier than usual. By March 20th at least five females had emerged at North Stoke, around 3-4 weeks earlier compared to the seasonal norm.

In the 40 days before the explosion of activity on September 19th there were just four singles reported on the website. On a personal note, I had not seen a Brimstone for 4-5 weeks.

I can think of two possibilities to explain the records for September 19th. The first explanation is that a warm, sunny day encouraged large numbers of Brimstones to temporarily come out of hibernation. The second explanation is that the very early start to the breeding season, coupled with six months of glorious weather, led to a very early emergence of the summer brood, which in turn allowed enough time for a partial second brood.

I favour the latter explanation.

Conclusion

If we go back in time to the late 20th century, the breeding cycles for these four species was well-established and settled. Brimstone was single-brooded, White Admiral was also single-brooded with an occasional very small partial brood, Adonis Blue was double brooded, and Green-veined White was double brooded with an occasional third brood.

Climate change is well named for it has changed the behaviour of many of our native butterfly species.

I began this article with White Admiral, as it is well-known to have an occasional partial second brood. What has changed in the past 30 years is the frequency of this partial second brood. In the first 94 years of the 20th century there were just seven records, but since 1995 there have been eleven records, which means there has been a record approximately every three years for those three decades.

Quoting from A Revised History of the Butterflies and Moths of Sussex, "A century ago females were laying their eggs in July or early August, by the 1990s mainly from late June". For the website years 2006-2025 the average first sighting was June 17th and in 2025 it was particularly early on June 9th.

An early emergence, coupled with fine weather, allowed enough time for a second breeding cycle to be successfully completed. A warming climate is gradually changing the breeding habits of this butterfly species.

Making a claim for a fourth brood Green-veined White should not be that controversial. The start and finish dates for broods one, two and three have been demonstrated and it is clear

from the website records that the third brood finished on September 22nd. Then 41 days later Lindsay Morris found a fresh female at Lancing on November 2nd, going one better when he found two more on November 8th. There has never been a Sussex record for Green-veined White in the month of November, which confirms the exceptional nature of these records. A fourth brood is certainly a Sussex “first” and may be a UK “first”.

Making a claim for a third brood Adonis Blue should not be unduly controversial. The key to understanding why it happened this year was the very early emergence of the second brood on July 17th which was 18 days earlier than the average date of August 4th (for the years 2006-2024). The Revised History of Sussex Butterflies and Moths informs us, “the second emergence takes place chiefly between late August and early October, occasionally from early August or to mid-November”. For the past 10 years the very latest date for the second brood emergence was August 12th. As a result of a warming climate Adonis Blue broods are generally starting earlier, and finishing earlier, which means there might be enough time for the completion of a third brood.

Making a claim for a Brimstone second brood will be controversial for some, but that’s probably because, as far as I am aware, this claim has never been made before. In the North Stoke/Amberley Downs area, Brimstones were breeding on March 20th, or thereabouts. This exceptionally early date, coupled with superb weather, led to a very early emergence of the summer brood. In turn, this provided the time for a second brood to be completed. There was a large emergence on September 19th, with very few other records in September, either before or after. On some parts of mainland Europe this species is known to have a second brood, and with a warming climate in the UK, but especially in Southern England, there is no logical reason why the same should not happen here.

Climate change is rapidly changing the breeding behaviour of many of our butterfly species. Expect to witness more partial broods and then regular extra broods in the next twenty years or so. It will happen.

Martin Kalaher 16/11/2025