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Editor's Notes

I apologise wholeheartedly for the lateness of this report: too much to do and too little time (and energy!)

Bill Shreeves and Robin George have done their usual wonderful job in pulling together all the data and analysing it, and we hope you find this description of the 2018 butterfly year interesting.

We always need more help, in recording butterflies, conservation work and all the administrative tasks that make the Dorset Branch of Butterfly Conservation such a successful branch. If you feel you can offer us even a little time, please contact our Chair, Nigel Spring

Lyn Pullen

Photo on front cover: Red Admirals by Lyn Pullen Photo on back cover: Wall by Andrew Reekie

Introduction

utterfly Reports, even on a relatively small scale like Dorset's, are the result of a huge amount of work by many people.

First and foremost is the recording work done by hundreds of people in various ways. Our top website recorder sent in sightings of 7,045 butterflies last year, while our transect walks counted 121,000. Without this huge volunteer effort we would not have the data which allows us to learn about what helps or hinders butterflies and which informs our attempts to help them. We hugely appreciate all your efforts.

Once submitted, the reports have to be verified so, as far as possible, erroneous sightings are rejected: thanks to Nick Urch, Stephen Brown and Dom Greves for this, and to Martin Raper, who harvests the butterfly data from some national recording schemes such as iRecord and Living Records.

All the verified data is then amalgamated into one database by Robin

George, who also enables it to be output in a mapped format, which is invaluable. Thanks, Robin!

Bill Shreeves and Robin then work on analysing the data, which feeds into the four area meetings and into this report.

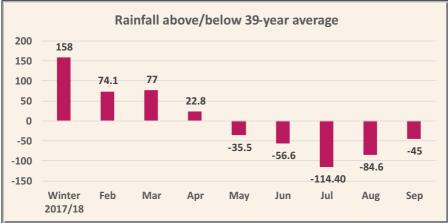
A lot of work, but hopefully it will aid our efforts both locally and nationally to help butterflies and moths, so thank you!



Green Hairstreak, Photo: Chris Becker

Weather







Weather

Winter Weather from October 2017 to March 2018

- Warning! There was no maximum temperature recorded for October/November. Average 5-year figures 2012 to 2016 were substituted.
- Rainfall was 158 mm above annual averages. This compares with 131 mm below average for 2017.
- Recent evidence suggests that warmer than average winters are not good for most species of butterflies so last winter may have helped.

February Weather 2018

- Both temperature and sunshine were well below average. This
 contrasts with Feb 2017 where temperature was above average.
- Rainfall was 74.1 mm above average: Feb 2017 was also above average.
- Not a butterfly friendly month, but the lower than average temperatures may have been favourable.

March Weather 2018

- Sunshine well below average but mean temperature was average.
- Rainfall 77mm above average.
- Probably not the sort of month which could have launched a good season for caterpillars out of hibernation.

Summer Weather: April to September 2018

- Temperature above average from April to July. August at average.
- Sunshine above average from April to September.
- Rainfall below average from May to September.
- Easily the best summer weather since 2013 and even then the rainfall was above average.
- As the summer moved on it is likely that caterpillar foodplants and butterfly nectar plants suffered from the lack of rain.
 However, some species like Brown Argus, Wall and Speckled Wood seem to have had a partial third brood despite this.

All Butterfly Data for 2018

2018 showed a 7.7% increase

2018 - 252,841 butterflies 2017 - 234,802 butterflies

receive butterfly records from multiple sources. The most scientifically reliable figures for increases and decreases in species numbers are our 'transect' walks, because they are walked under set conditions. To these are added the records reported via our website and other sources, which cover the entire year rather than the set 26 week period of transect walking.

Two national online systems used for recording all sorts of wildlife are iRecord and LivingRecord, and these (eventually) feed local records back to us.

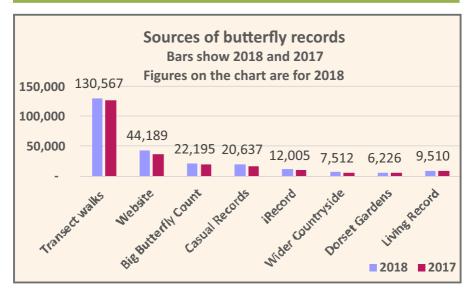
Three schemes run nationally by Butterfly Conservation HQ also bring us records: the Big Butterfly Count, Garden Records www.gardenbutterflysurvey.org and 'Wider Countryside' sightings.

Add in a few other bits and pieces, and there are a huge number of records, all of which are verified as far as possible by a small team of dedicated people, to whom we give grateful thanks. A sighting of a



A Purple Emperor insisting on being recorded! Photo: Mark Pike

All Butterfly Data for 2018



Meadow Brown in the countryside in July would be nodded through, but a sighting of a Purple Emperor in Poole would be looked into very thoroughly.

The wide range of ways you can approach recording butterflies is detailed on our website.

There is also a booklet:

'Counting Dorset's Butterflies and Moths' which has lots of useful information, plus the rules for the formal transect walks. Available free to those serious about butterfly recording in Dorset: contact Lyn Pullen (see inside back cover) or there is a link to an online version on the Recording page of the website.

Although our name is "Butterfly Conservation" (for simplicity), we do work just as hard to help moths. If you record moths, there is a lot of helpful information on the website of our sister organisation, the Dorset Moth Group:

www.dorsetmothgroup.info.

To report your moths, use www.livingrecord.net

Highest number of species seen:

34 at Fontmell Down 32 at Alners Gorse 32 at Bindon Hill 32 at Cerne Giant

ransect walks are always our biggest contributor of records, and the most scientifically useful, in that they have a set of rules regarding the conditions in which to walk, which makes the data more accurately comparable over a long period of time.

Dorset runs a high number of transect walks - 64 in 2018 - and

more help is always needed to ensure all 26 weeks are walked. If you would like to become part of a transect walking team, please contact Bill Shreeves (see inside back cover). There is a map showing the location of the walks on our website - go to 'Recording', then 'Become a Recorder' and scroll down to 'Butterfly transect and target species recording'.





Compton Down. Photo: Bill Shreeves

Although all transect teams try to make sure all 26 weeks are walked, some inevitably are missed, often due to the weather not being sufficiently good. 64 walks, walked 26 times gives a potential total of 1,664 individual walks. 2017 was an excellent year, with only 124 missed, and 2018 was not far behind with only 129 missed, or 7.5% of the total.

Our very grateful thanks to all the dedicated walkers who turned out to do the counts. If the average walk takes 1.5 hours (probably an underestimate), you spent (1535 walks x 1.5 hours) 2,302 hours walking. If you were paid at the national living wage of £8.21 per hour, that would cost £18,900. Feel proud of yourselves!

The number of walks missed gives us some sort of indication of how good a butterfly year it was, so 2018 looks like it should be quite good.

Regarding the actual butterfly records, the computer software we use: 'Transect Walker Online' uses an averaging system to create records for missed walks, but generally missed walks still count quite heavily against results.

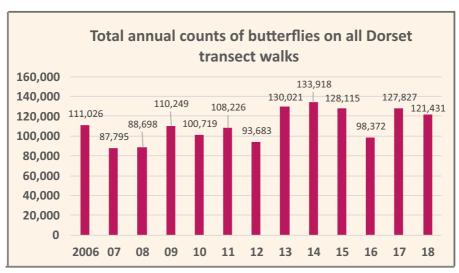
Highest butterfly count on any transect walk: 5850 at Durlston East

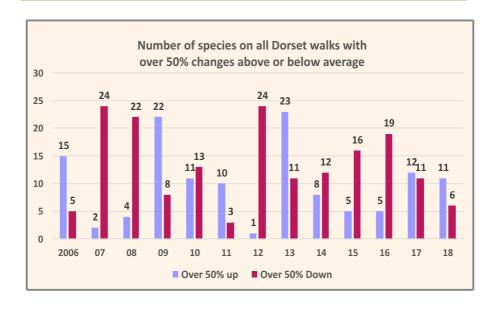
he question everybody asks is "Was it a good year for butterflies?". The answer has to start with "Define what you mean by good". The most butterflies? The most species? The species which has increased most? The species which has spread most widely?

Transect walk data answers

questions about the abundance of each butterfly species, not their range, so we will be using abundance to attempt an answer to the question.

The graph below gives us an overview of the butterflies counted on all transect walks since 2006, so you can see that 2018 was a reasonable year: not



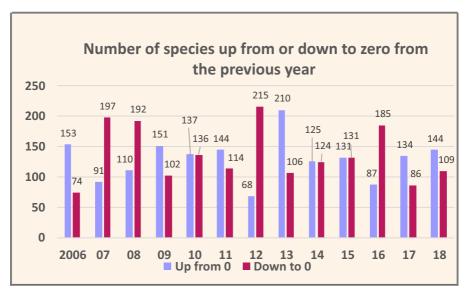


as good as 2017, but a lot better than 2016. It has the fifth highest total over this period and its 121,431 compares to an average of 110,775. The number of walks we are able to cover varies a little from year to year, so when we look at the total divided by the number of walks manned each year, 2018 become the sixth highest.

The graph above starts us off by looking at the number of species which significantly changed in abundance (i.e. were 50% up or down on their average since

2006). Over the 13-year time span, 2018 was the fifth highest for 'ups' and third lowest for 'downs', so we again have a suggestion that it was not a bad year.

Another possible measure is whether species have appeared on a site or disappeared from it compared to the previous year. As the graph overleaf shows, there were more species up from zero and fewer species down, so that gives us another indication of a good year.



The graph above is another way of making a judgement as to whether it was a good butterfly year: how many species which were not recorded on a particular transect last year were seen this, or how many species seen the previous year on a particular transect were not seen this year.

You can get the overall idea from looking at the figures. If you want to understand how the figure is derived, you need to grasp that it is a combination of species and walks. So if Brimstones were seen on 10

walks in year one, but only seven walks in year two, that would count as three walks going down to zero. Then if Purple Hairstreaks were seen on 20 walks in year one, but only on three walks in year two, that would add another 17 walks which are down to zero. So then the total would be 20, and so on. There are limitations to this methodology, so it is only meant as an indicator.

As the graph shows, more figures were up from zero than down to zero, suggesting that it was not a bad year.

Top species in 2018



here were 10 "winners" in 2018, but the Purple Hairstreak is the only butterfly to have increased compared to both its annual average figure and to its previous year's figure.

There were 101 reports of this butterfly in 2018, which is the second-highest figure since 1999: only 2004 beats it, with 117. The number of walks where it was counted was not very high however, only 8 compared to a record 15 in 2005. See the previous page for related graphs.

Even this record number is still a low figure, but is unlikely to be a true reflection of its abundance, as it is a very difficult butterfly to count, spending much of its time up in the top of oak trees, seeking honeydew secreted by aphids. It is probably that the very hot summer weather reduced the aphids and therefore the honeydew, forcing the butterflies down to find alternative food at a level where they could be more easily counted.

Ex-Dorset member Lawrie de Whalley counted over 50 on a visit to a wood in Surrey, so it is not just a Dorset phenomenon.

Highest counts were 47 at Lydlinch, 19 at Piddles Wood and 10 at Alners Gorse.

he nine other winners in 2018, which achieved either 50% above their annual average or above the previous year, but not both were:

- Essex Skipper
- Brown Argus
- Silver-studded Blue
- Silver-washed Fritillary
- Small White

- Large White
- Green-veined White
- Common Blue
- Small Heath

Essex Skipper

It can be difficult to tell an Essex Skipper apart from a Small Skipper when doing a transect walk, given the rules say you should maintain a steady walking pace, which does not give you time to stop and examine the antennae tips. If it is an Essex, it must show clear cut-off of the black tips to its antennae which are visible from the underside too; if they are greyish, brown or

patchy black, the butterfly is not an Essex.

The advice is that if in doubt you record it as a Small Skipper. Despite this, 67% of the walk sites reported numbers more than 50% above their annual average.

The highest count was 13 at Bindon Hill (Lulworth), with Fontmell Down in North Dorset being a close runner-up with 12.



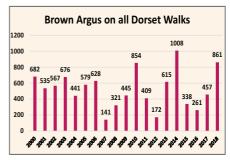
Essex Skipper. Photo: Mark Pike



Brown Argus

61% of sites gained over 50% compared to their annual averages. This is the seventh time since 2000 the Brown Argus has been a winner, and the second highest count since 2000. 202 were counted at Ballard Down.





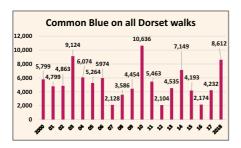
Brown Argus. Photo: Brian Arnold.

To tell a Brown Argus apart from a Common Blue look at the underside of the forewing - the former has no spot closer than halfway in to the body.

Common Blue

60% of sites gained over 50% on 2017, and it scored its third highest count since 2000.

The total of 8,612 was beaten in 2003 (9,124) and 2010 (10,636)



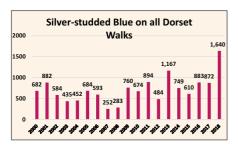


Mating pair of Common Blues. Photo: Shona Refoy

Silver-studded Blue

Best counts were mainly from east and south Dorset. 60% of sites gained over 50% on annual averages and 2018 saw a record total count of 1,640; next best was 2013 with 1,167.

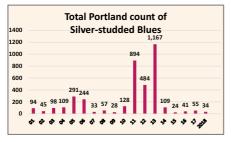
905 were counted at Sopley Common.



Silver-studded Blue. Photo: John Woodruff

Silver-studded Blue on Portland

Considering how well the Silver-Studded Blue did elsewhere, the results on Portland were disappointing. There were none at Perryfields, and numbers were well down at both Broadcroft and Tout. It could be that the

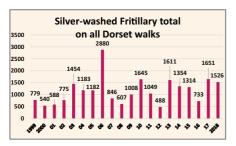


birds-foot trefoil food plant on the island suffered badly in the dry weather.

It has been clear for some time that Portland does not move in harmony with the heathland sites. Heath sites in the east all did well, though in the south Studland and Hethfelton (near Wareham) did not share in the bonanza, but at least remained relatively stable. There was some consolation for Portland in that their sites' combined count was lower in 2015 and 2009.

Silver-washed Fritillary

This eye-catching woodland butterfly had its fifth highest count since 1999. 52% of sites



gained more than 50% on annual average. The best site was Stubhampton Bottom with 287.

This species seems to be doing well in Dorset based on its distribution, which was found in 241 kilometre squares in the 1995-99 recording cycle, but 449 in the 2010-14 time span: an increase of 86%.



Silver-washed Fritillary sharing a buddleia flower with a Red Admiral. Photo: Harold Gillen

Three of the Whites did well in 2018.

Small White.

Third highest count since 2000. 78% of sites over 50% up on 2017.

Large White

Third highest count since 2000. 56% of sites gained by more than 50% on 2017.

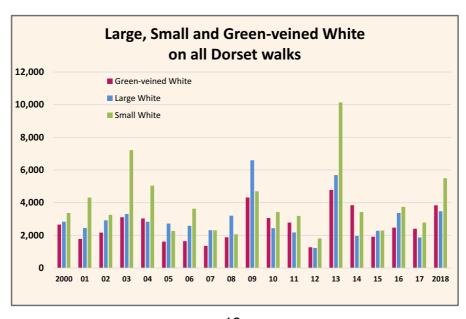
Green-veined White

Fourth highest count since 2000. 56% of sites up more than 50% on 2017.

The three species are shown on a combined graph to save space, but the comparison between them is quite interesting.



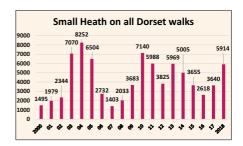
Green-veined White. Photo: Mel Bray.



Small Heath

52% of sites gained by more than 50% on 2017.

It was only the seventh highest count since 2000, but it made a big recovery from a low of 3640 in 2017, which was itself a good recovery on the year before, when we only counted 2,618. It can be seen from the graph that it does have high fluctuations from year to year.



The Small Heath never has its wings open when it lands, which helps with its identification, but makes finding a photo of the uppersides next to impossible: if you have one, please send it in to us; pinned specimens not allowed!



Small Heaths. Photo: Shona Refoy

he following species are losers because numbers recorded are both less than 50% of the 2017 figure and less than 50% of their average on more than half of the walks on which they are recorded.

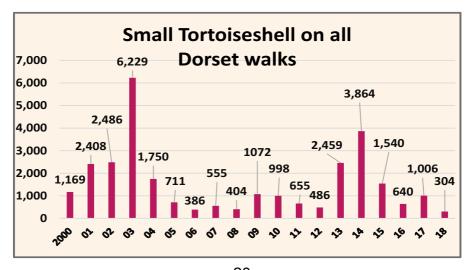
Six species came up as losers in 2018:

- Small Tortoiseshell
- Marsh Fritillary
- Wall
- Red Admiral (regular migrant)
- Painted Lady (variable migrant)
- Clouded Yellow (variable migrant)

Small Tortoiseshell

A butterfly which is causing us some concern. As the graph shows, 2018 had the lowest ever count on transect walks. This

was also its fifth consecutive year as a losing species.
One theory for the decline is that the parasitic fly Sturmia bella is prospering due to global





Small Tortoiseshell. Photo: Dave Law

warming; it also attacks the Peacock and Red Admiral but studies suggest that the Small Tortoiseshell's life-cycle is more closely synchronised with that of the fly, so it may be more prone to parasitism. There is an excellent clip on You Tube showing how Sturmia bella operates by detecting the caterpillars and laying its eggs near them, so that they then ingest the eggs which hatch inside them

Sightings of Small Tortoiseshells just fell away after August: only

19 casual sightings in September and October. Only three were seen on transect walks in September. They may have hibernated early, but you would expect to see them nectaring at some point before winter, and Malcolm Hull, who monitors them in his garden shed, did not see them leave at any point.

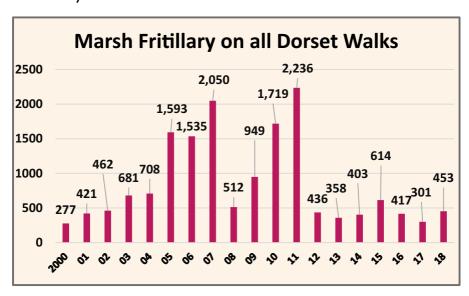
If you have a suitable outhouse, please consider starting a winter transect in it, where you look for hibernating butterflies, and don't forget to send in any sightings.

Marsh Fritillary

It was this butterfly's fifth year as a loser and the graph clearly shows it has not performed well since 2011.69% of its 18 sites were over 50% down on their annual average. Lydlinch Common was the highest count in Dorset at 132. This is particularly pleasing as it has been the subject of careful management in recent years.



Marsh Fritillary underside. Photo: Caroline Stringer

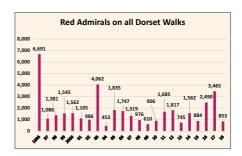


Unusual sightings of the Marsh Fritillary included one seen on 22 May on the downs above Ulwell (Swanage) by Andy Martin, which is only the fourth record in Purbeck since 1970. This is thought likely to be a release. One was also seen at Bagwell Farm Touring Park Chickerell (Weymouth) in June by Karen Kennedy; there are no known colonies nearby.

Red Admiral

This was the worst performing species with 84% of its 64 sites more than 50% down on 2017 and 63% of its sites over 50% down on annual averages. This represented a 75% drop in numbers from the previous year and was the fourth lowest count since 1996. Top count came from Cerne with 280.

We do not know the reason for this. The resident population is thought to be only a small fraction of the number we see each year, which is increased by migrants arriving in May and June from central Europe. Even if the initial migration was poor, you might expect them to have done better later, as the weather appeared favourable.





Red Admiral. Photo: Shona Refoy

The Red Admiral was reported in every month of 2018 on the website.

The Dorset Branch of Butterfly Conservation is one of 32 branches of the national society, which is based near Lulworth. Members of Butterfly Conservation are automatically members of their local branch, but can join other branches as well for a small fee.

www.butterfly-conservation.org.uk

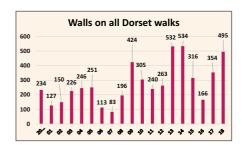
Wall

A tale of two halves. Overall, 52% of its 23 sites were more than 50% below their annual averages, but these poor results were due to the performance of the west and north regions. In south Dorset it was the top butterfly species and the total count on all Dorset walks was the third highest since 2000.

This species is now almost exclusively found in the south of the county. There have, however,



Painted Lady. Photo: Mel Bray



been some encouraging signs that it is still on the chalk of north Dorset. A second brood individual was seen at Cashmoor on 5 August and there were late non-transect sightings on both Hod and Hambledon Hills.

Painted Lady

Only small numbers of this migrant were reported in 2018: a total of 141 on the transect walks

We have not see a major migration since 2009, when the transects recorded 5035, and the massive invasion of 1999, when 18,311 were counted is a very distant memory.

Clouded Yellow

It was not a good year for this migrant either: only 113 counted on walks. The last major migration was 2006, when we counted 802.

Chalkhill Blue



he Chalkhill Blue is a species which continues to worry us, having virtually disappeared in the west of the county.

Theories to explain this include chemicals excreted from cows, a rise in temperature, or a specific pathogen.

In 2018, in the west of the county, the species was only recorded on the three Portland transects, and was yet again missing from the four transect walks where it used to be recorded. Numbers were up from 253 in 2017 to 400. It was recorded on seven walks in other parts of Dorset.

We have lists of sites where Chalkhill Blues were recorded in the past, and are always looking for recorders to go out and look for them again. We are keeping a database of all the results, including the visits where none were found. If you would like to get involved, please contact Bill Shreeves or Robin George (see inside back cover for contact information).

Rare species in Dorset

Purple Emperor

A few more sightings of this species are coming in than we used to receive: we had 19 sighting from the east of the county this year. One sighting in Alderholt and one in the same Verwood garden as in 2017 gives us some hope that there is a breeding colony somewhere in this area, while Dave Law sent us a photo of a Purple Emperor egg laid in Garston Wood and congratulated the RSPB for providing good conditions for this species. However, despite a



Purple Emperor in Garston Wood in 2018. Photo: Dave Law

concentrated effort, we did not find any at Deadmoor Common (near Sturminster Newton) where there was an unconfirmed report of one the previous year.

Wood White

Another species only just remaining in Dorset. It can now only be found to the west of Lyme Regis on the undercliffs that straddle the Devon border and on The Spittles, just east of Lyme Regis. We ask that if you go looking for it, please take great care, as these areas are not always very accessible or stable.

Small Pearl-bordered Fritillary

This still just hangs on in Dorset, on Godlingston Heath in Purbeck. The National Trust are working to manage the area to encourage this butterfly, so we hope it will survive. This is a small and vulnerable colony, so it is preferable that you refrain from visiting as any disturbance might have a detrimental effect.



Small Pearl-bordered Fritillary. Photo: Brian Arnold

Rare species in Dorset

White-letter Hairstreak

This species suffered when Dutch Elm disease reduced the numbers of this tree in the UK significantly. Its numbers in Dorset are low, but it is also probably under-recorded, as it is not easy to spot, spending most of its time up in the tops of trees.

A smattering of records came into the website, as can be seen on the map, and we also had reports of one in a garden in Buckhorn Weston (near Gillingham) and on the Duncliffe transect walk, both of which are new areas for it in Dorset. It is doing well at our Alners Gorse Reserve.





White-letter Hairstreak. Photo: David Parish

Unusual visitors



Large Tortoiseshell at Warmwell Gravel Pits in 2018. Photo: Bob Ford



Small Tortoiseshell, Photo: Brian Arnold

Large Tortoiseshell

Three were reported in 2018, all in the south of the county. One was north of Knitson, in Purbeck, (20 April); one at the Warmwell Gravel Pits (26 April) and the other was at Bottom Combe Quarries on Portland (1 July).

There are occasional sightings along the south coat from West Sussex to South Devon, suggesting that the spring sightings are migrants.

The Large Tortoiseshell is, as its name suggests, larger than the Small Tortoiseshell: 75mm as opposed to 56mm wingspan.

It is duller in colour than the Small Tortoiseshell and lacks the white spots near the tip of the forewings. The underwings are a lot darker

Considered common in Victorian times, it has not been resident in the UK since the 1950s, but it remains fairly common in Europe. Sightings are probably migrants from the continent or releases, and the majority are along the south coast, though there are some in the south-east and a few scattered records elsewhere.

Unusual visitors

Queen of Spain Fritillary

One sighting, on the coast near Burton Bradstock on 26 July. This is a European species, and very rare migrant to the UK, mostly seen along the south coast. It can be recognised by the large silver spangles on the underside of the hindwings, which show clearly in Tony's photo.



Queen of Spain Fritillary 2018.

Photo: Tony Hayne



Monarch. Taken at the Portland Bird Observatory in 2018. Photo: Roger Hewitt

Monarch

Two were recorded in 2018: one at West Moors and one at the Portland Bird Observatory.

The most likely source of these is that they have been released, possibly by the butterfly being used as live confetti at weddings: a practice we do not condone.

Could you leave us something in your will?

Although the vast majority of the work undertaken by the branch is volunteer-led, there are always things which have to be paid for, and we want to ensure have sufficient income to continue our direct conservation work at the very least.

If you could leave us something in your will, it would be of immense value to us; if you want the money to come to Dorset Branch you need to specify this.

Butterfly Releases

e have mentioned butterfly 'releases' a couple of times in this report, so what do we mean?

A butterfly release is when a number of butterflies is let go in an area where they would not usually be found. There are two main reasons for this.

One is the use of butterflies as live confetti at weddings (or sometimes funerals). Unfortunately, the species used are often not native, so they are not going to able to breed and will just die out.

The other releases are those made by individual people thinking that they will be able to introduce a species where it either has not existed before, or re-introduce it where it has died out.

While the motives behind this thinking are usually pure, there needs to be a lot more done than just obtaining some chrysalises, breeding them through to adults and letting

them go, which usually leads to them dying out within a short time. The very successful introduction of Large Blues in the West Country was due to some very rigorous science by Dr Jeremy Thomas and his team, combined with a lot of work to prepare the habitat and to manage it afterwards, which involved many people and needed a lot of money.

The practice also makes it difficult for us to tell if unusual butterflies turning up are genuine or if they are introductions which will appear in our figures this year but probably be gone by next year. While we all want to see more butterflies around, and to get back species which are extinct in a certain area, random releases are not the best way forward.

See Butterfly Conservation's website for the full policy on introductions:

https://butterfly-conservation.org/our-work/policies-and-statements

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