BUTTERFLY CONSERVATION UPPER THAMES BRANCH

Dingy Skipper Report 2014-2023

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Introduction

Another species with no species champion report for many years offered another opportunity to refine and test SCRIPT[1]. In this case, the last Dingy Skipper species champion report was written in 2012 by Dave Wilton. As with the 2023 Green Hairstreak species champion report, I am writing this report in the capacity of "placeholder" species champion, jointly with Ben Paternoster.

This report builds upon the introduction of visit counts into the 2023 Green Hairstreak species champion report, as suggested by Nick Bowles, and uses visits per record as a fundamental ingredient of the analysis. Visits per record is calculated simply as number of visits in a year divided by number of records for a particular species (in this case, Dingy Skipper) in that year. It can be calculated for a 1km square, or any other size of square, or aggregated for any irregularly-shaped area defined in terms of 1km squares, and thus in particular for the clusters identified in the analysis. Visits per record can be interpreted as an alternative measure of population size, one that goes in the opposite direction to abundance; a higher value of visits per record means that recorders are having to put in more effort for every record, and thus it indicates lower abundance.

Because visits per record, as a numerical scale, runs in the opposite direction to abundance, an antonym for abundance would be helpful as a single word name for it. Part of the goal of this report will be to propose, and to enlist enthusiasm for, the name "scarcity" as a meaningful name for visits per record, and to provide evidence that scarcity is actually at least as valuable a measure of population size as abundance, if not more so.

A separate user guide report called "How to write a species champion report using SCRIPT" has also been written. As with the 2023 Green Hairstreak species champion report, the reader is thus advised at the outset that for brevity, multiple references to the user guide report have been omitted. It can and should be consulted whenever explanation or detail is found to be lacking.

As noted briefly in passing in the 2023 Green Hairstreak species champion report, visits per record would ideally be based on a visit count confined to the flight period of the species under scrutiny. This refinement *will* be introduced in development planned to be completed before the start of the 2025 season; the analysis in this report uses only visit counts based on whole years, in the interest of issuing both this report and the user guide report without further delay.

[1] Species Champion Report Information Processing Tool

The data basis for the report

I used a data set supplied by Peter Ogden, of records from the Butterfly Conservation database. This raw data set has the following features:

- 7,676 records (7,674 of adults, 2 of immature lifecycle stages)
- 29 years included (1995-2023)
- 344 1km squares represented (5.5% of UTB territory)

The main body of the report confines itself to the ten-year period 2014-2023, and the 291 1km squares represented in the validated data set for that period of time, but this initial section takes a moment to examine the period 2000-2023, in order to demonstrate the value of scarcity as a derived measurement (it is much clearer when seen over a longer period of time). The number of Dingy Skipper records per year, shown in **Figure 1**, has increased steadily from 2000-2023, but there has been no trend in scarcity, shown in **Figure 2**. Only the first scarcity value deviates significantly from a statistical flat line, and at that time the number of Dingy Skipper records was very small. For Dingy Skipper, the average value of scarcity from 2000-2023 is 43.

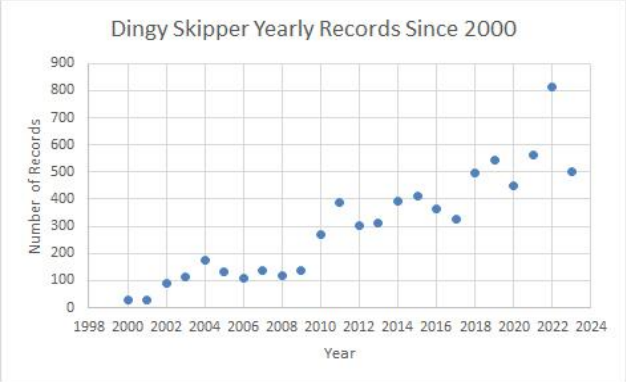

Figure 1: Dingy Skipper yearly records 2000–2023

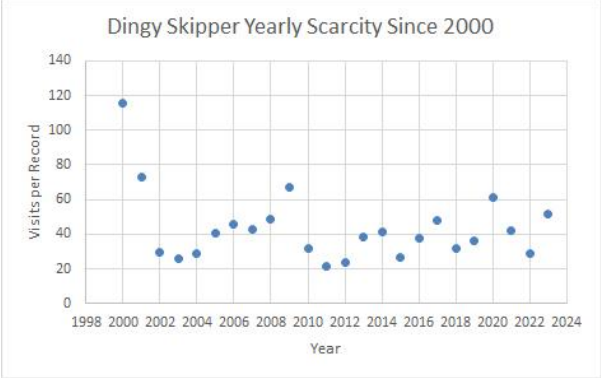

Figure 2: Dingy Skipper yearly scarcity 2000-2023

Data validation

The issues found in the raw data, and consequent edits and annotations, are as follows:

- 53 pairs of duplicate records: one of each pair was flagged EXCLUDE, and was not used in the analysis.
- 40 records with a grid reference error, of which:
    - 27 could be corrected based on the site name data. These records were flagged GRIDREF, and included in the analysis.
    - 13 could not be corrected on any apparent basis. These records were flagged EXCLUDE, and were not used in the analysis.
- 23 records of dubious validity (the associated 10km square had at most three records in the data set). These records were flagged SUSPECT, and could optionally also not be used in the analysis.

As mentioned in the 2023 Green Hairstreak species champ report, six of the records flagged GRIDREF and corrected for the analysis were for Grangelands, and had the same grid reference error, the result of a twisted digit: SP872050 (rather than SP827050) had been entered as a grid reference at the time the Grangelands transect was set up, incurring an error of approximately 5km, and had been propagated for seven years before being spotted and corrected, affecting 426 records for all species in the interim. The author contacted UKBMS and confirmed that the UKBMS database records are now error-free. However, the UTB records that were downloaded annually from UKBMS over the period in question still need to be corrected.

Clustering the data

On the left, in **Figure 3**, is shown a conventional distribution map for Dingy Skipper from 2014-2023. On the right, in **Figure 4**, is shown a colour-coded version of that map, according to the key in **Table 1**, illustrating the clusters of connected 1km squares occupied by Dingy Skipper. We can see five main clusters of more than ten connected 1km squares.

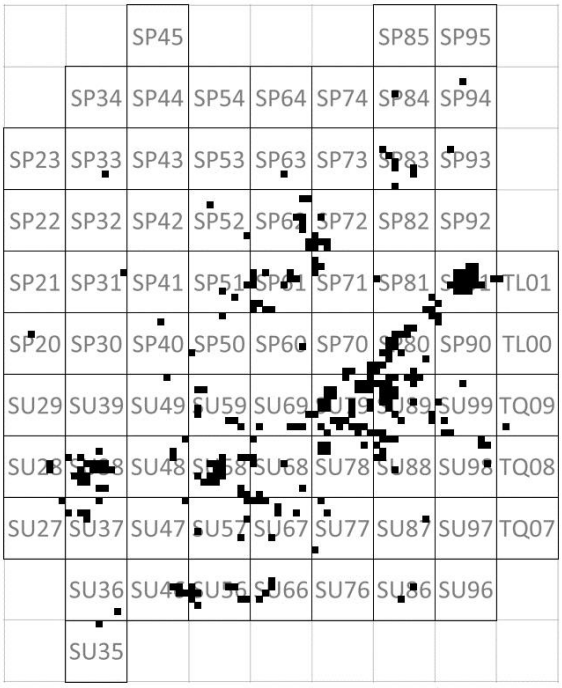

Figure 3: Dingy Skipper UTB distribution 2014-2023

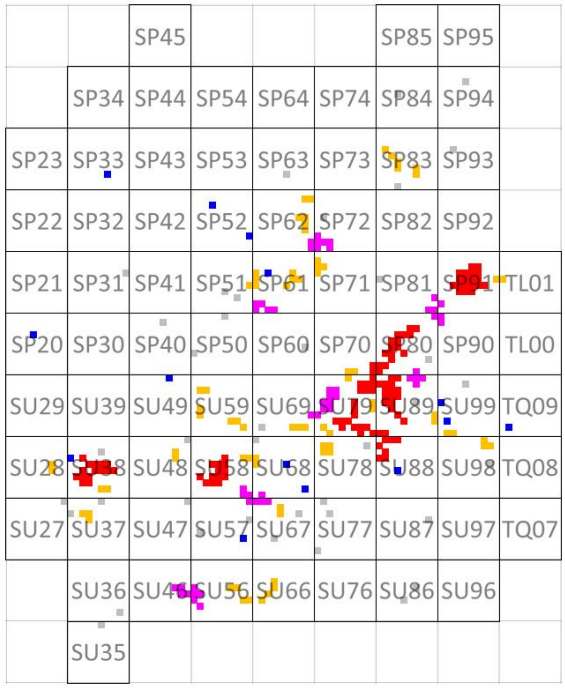

Figure 4: Dingy Skipper UTB clustered distribution 2014-2023

Number of 1km squares	*More than 10*	*5-10*	*3-4*	*2*	*1 (isolated)*	*1 (random)*
Colour						

Table 1: Colour key used to illustrate clustered, isolated and random 1km squares

The main UTB Dingy Skipper clusters

For reference[2], **Appendix 1: Dingy Skipper clusters** gives a summary table for all the clusters identified in the analysis. **Appendix 2: Dingy Skipper isolated 1km squares** and **Appendix 3: Dingy Skipper random 1km squares** give similar summary tables for the isolated 1km squares and random 1km squares. To economise on table space, visits, records and scarcity are all combined into a single column: scarcity is quoted as a decimal first, then in brackets as a fraction (visits/records). Thus for example in **Table 2** below, for Ivinghoe, scarcity is 4.3, calculated as 2764 visits divided by 650 records. The table entries are sorted by scarcity from lowest to highest (i.e. from highest to lowest abundance, as best as can be estimated without actually looking at true abundance data yet).

Five clusters comprise more than ten 1km squares each, earning them the distinction of being coloured red in **Figure 4**. They are summarised in **Table 2**. All have good numbers of records from every year in the period 2014-2023.

Name	Key Words	1km squares	Scarcity
Ivinghoe	Church End, College Lake, Incombe Hole, Ivinghoe Beacon, Pitstone Quarry, Steps Hill	19	4.3 (2764/650)
Aston Upthorpe	Aston Upthorpe, Lids Down, Oven Bottom	13	4.7 (1349/289)
Crog Hill	Crog Hill, Devils Punchbowl, Hackpen Hill, Pigtrough Bottom, Scary Hill, Seven Barrows	15	4.8 (909/189)
Grangelands	Andridge Common, Bradenham, Brush Hill, Buttlers Hangings, Coombe Hill, Grangelands, Rifle Range, Sands Bank, Saunderton, Small Dean Bank, Yoesden	41	5.1 (6567/1291)
Homefield Wood and environs	Fingest, Frieth, Homefield Wood, Moorend Common, Strawberry Bank, Swains Wood, Turville, Watlington Hill	21	13.9 (2278/164)

Table 2: The five main UTB Dingy Skipper clusters

As for Green Hairstreak, the cluster labelled Grangelands is by a wide margin the most extensive Dingy Skipper cluster, with twice as many 1km squares as the next biggest. The first four clusters all have a comparable scarcity value, between 4.3 and 5.1. Bearing in mind that, at this stage of SCRIPT development, visits are calculated for the whole year, rather than for a particular species' flight season, the chances of seeing Dingy Skipper in these clusters at the right time of year are good indeed. Homefield Wood and environs has a higher scarcity value of 13.9, apparently indicating that, although an extensive cluster, it is

[2] For simplicity of analysis in the current version of SCRIPT, the record counts in these tables exclude the immature lifecycle stages.

more challenging territory if Dingy Skipper is the target species; more than twice as many visits are required for every Dingy Skipper record.

Flight period

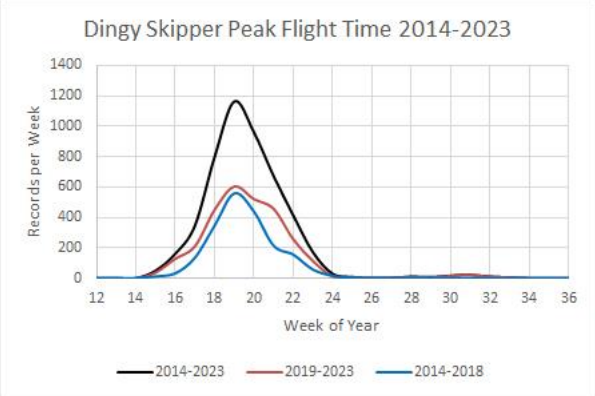

Figure 5: Dingy Skipper UTB flight period 2014-2023

The Dingy Skipper's flight period in UTB territory is shown in **Figure 5**. Although generally thought of as a single-brooded species, the Dingy Skipper can complete its life cycle twice in some years when conditions are favourable. The main brood is typically on the wing from about week 14 to week 24. The second brood hardly registers in **Figure 5**, indicating that it generally does not occur, and that when it does (roughly between week 28 and week 33), it is relatively limited in *where* it does so.

A more detailed analysis of the Dingy Skipper's flight period dates is given in **Table 3** for the main brood, and **Table 4** for the second brood.

Year	Records	First	p_{05}	p_{50}	p_{95}	Last
2023	490	20-Apr-23	07-May-23	23-May-23	11-Jun-23	07-Jul-23
2022	795	15-Apr-22	24-Apr-22	12-May-22	07-Jun-22	28-Jun-22
2021	560	22-Apr-21	05-May-21	29-May-21	14-Jun-21	23-Jun-21
2020	394	19-Apr-20	24-Apr-20	18-May-20	02-Jun-20	23-Jun-20
2019	536	17-Apr-19	23-Apr-19	15-May-19	03-Jun-19	28-Jun-19
2018	491	14-Apr-18	08-May-18	21-May-18	10-Jun-18	01-Jul-18
2017	320	07-Apr-17	25-Apr-17	16-May-17	03-Jun-17	14-Jun-17
2016	359	27-Apr-16	05-May-16	16-May-16	06-Jun-16	28-Jun-16
2015	409	18-Apr-15	01-May-15	16-May-15	11-Jun-15	27-Jun-15
2014	390	17-Apr-14	30-Apr-14	16-May-14	08-Jun-14	20-Jun-14

Table 3: Dingy Skipper UTB main brood dates 2014-2023

Week 26 is used as the dividing line between main and second broods. As well as first and last dates, the tables show three percentiles:

- p_{05}, the fifth percentile; only 5% of the data lies below this value
- p_{50}, the median; 50% of the data lie below this value, and the other 50% above it
- p_{95}, the ninety-fifth percentile; only 5% of the data lies above this value

p_{05} and p_{95} give more robust measures of the extremes of the flight period, by ignoring the most extreme values. In **Table 4**, only three years out of ten (also three out of the last four years) have sufficient records to give a credible indication of a true second brood.

Year	Records	First	p_5	p_{50}	p_{95}	Last
2023	8	19-Jul-23	20-Jul-23	30-Jul-23	15-Aug-23	15-Aug-23
2022	11	09-Jul-22	12-Jul-22	29-Jul-22	17-Aug-22	20-Aug-22
2021	0					
2020	49	12-Jul-20	17-Jul-20	05-Aug-20	21-Aug-20	24-Aug-20
2019	3					
2018	2					
2017	3					
2016	1					
2015	0					
2014	3					

Table 4: Dingy Skipper UTB second brood dates 2014-2023

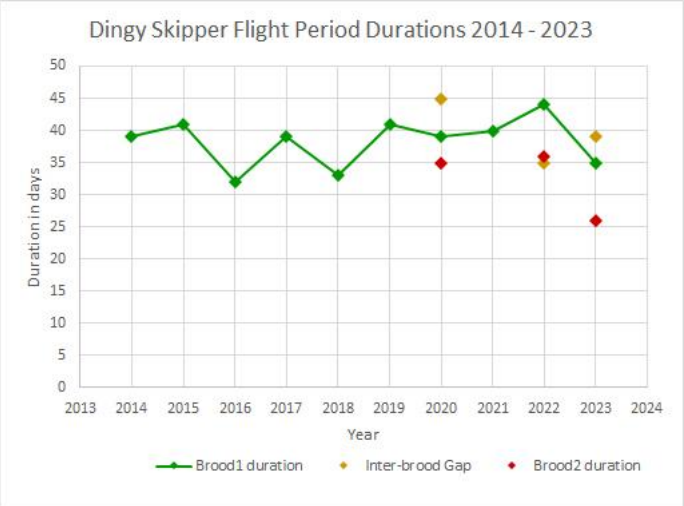

Figure 6: Dingy Skipper UTB flight period durations 2014-2023

The dates in **Table 3** and **Table 4** were used to calculate the durations of the two flight periods and the interval between them, and these are plotted in **Figure 6**. The duration of the main brood fluctuates somewhat about an average of 38.3 days, but without any apparent trend. Indications are that the second brood, when it occurs, is on the wing for less time than the main brood; however, the number of records for the second brood, when it occurs, is always so much smaller than for the main brood that this apparent feature may just be an artefact of insufficient data (it is generally the case that extreme values are under-represented in a data set when the number of observations is small).

The overall population size (compared with recent years)

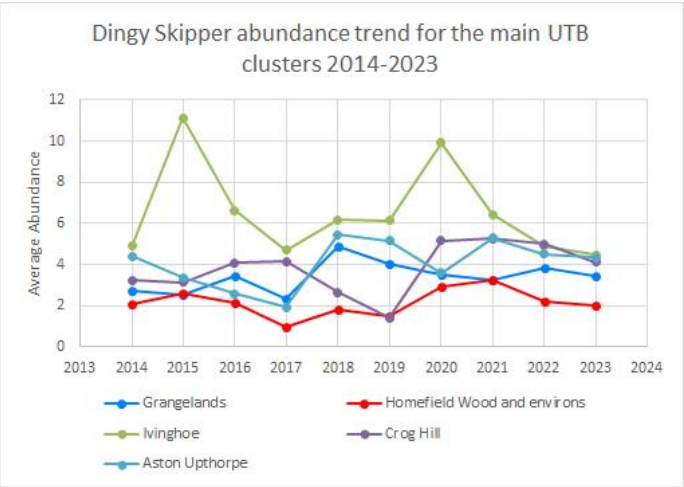

Figure 7: Dingy Skipper UTB abundance trends 2014-2023

The abundance trend for all five of the main UTB Dingy Skipper clusters, based on specimen count (the direct measure of abundance available from the data) is plotted in **Figure 7**. It can be seen that overall, Ivinghoe is clearly the cluster where Dingy Skipper is most abundant, and appears to have had two particularly good years in 2015 and 2020; in both cases, these boom years were isolated occurrences. Homefield Wood and environs is the cluster

where Dingy Skipper is least abundant. The other three clusters are sandwiched in between, and change order regularly amongst themselves. It was already noted in **The main UTB Dingy Skipper clusters** that Homefield Wood is more challenging territory for Dingy Skipper sightings, as measured by scarcity, than the other four clusters, and **Figure 7** lends additional weight to that conclusion. It's time for a direct comparison between abundance and scarcity.

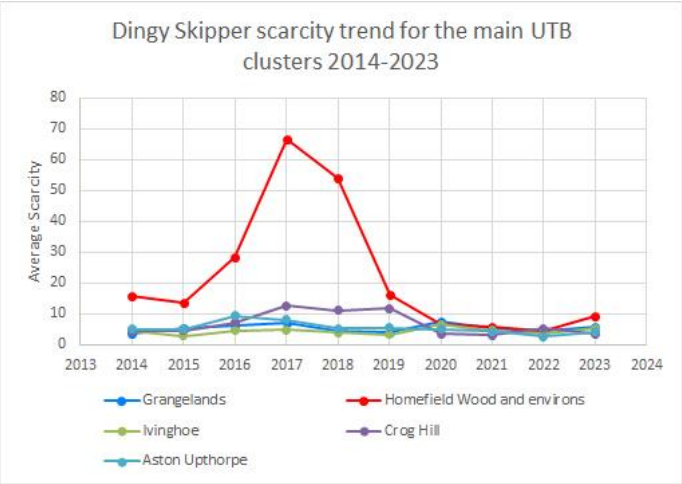

Figure 8: Dingy Skipper UTB scarcity trend 2014-2023

Figure 8 plots scarcity for the main UTB clusters for the period 2014-2023. A clear pattern can be seen for Homefield Wood and environs, so clear that it dominates the other four clusters; if scarcity is to be believed as a meaningful analytical measure, the Dingy Skipper population in Homefield Wood and environs crashed alarmingly in the period 2016-2018 before recovering to where it was previously; at worst, in 2017, four to five times as many visits were being made per record as in 2014-2015. Since 2020, Dingy Skipper scarcity has decreased to a level comparable with the other four main clusters.

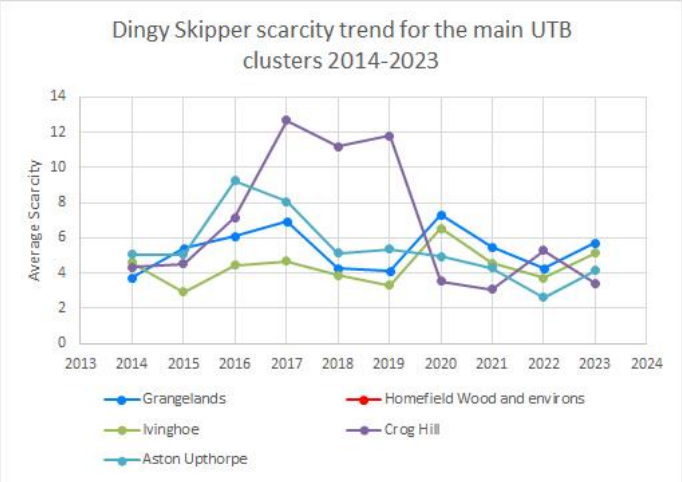

Figure 9: Dingy Skipper scarcity trend for main UTB clusters 2014-2023 excepting Homefield Wood and environs

Homefield Wood and environs dominates **Figure 8** so completely that it is worth removing it from the graph in order to properly appreciate the data for the other four clusters, as shown in **Figure 9**. Now that the vertical scale has been made appropriate for the other four main clusters, we see that the Dingy Skipper population crashed similarly at Crog Hill from 2016-2019 i.e. the same period as Homefield Wood and environs, with an additional year to recover; on the other hand, the crash was not as severe.

The other three main clusters do not display sufficiently extreme systematic year-to-year variability to be interpreted as having undergone significant shifts in scarcity. Ivinghoe has the lowest scarcity for the five years from 2015-2019, consistent with it being the most abundant site per **Figure 7**.

Any changes in distribution

This part of the report relies least on analysis that is built into SCRIPT, and most on the champion's inspection of the data in order to tease out where there are credible indications of any change in the status of a cluster or isolated 1km square.

In practice, distribution is equated simply with all the 1km squares in which a species has been recorded, regardless of the record counts in each square, or the abundance values in those records. However, this simple and binary definition of distribution is only robust under steady-state conditions, and can founder badly when distribution is changing. Even if we were to try and create a more sophisticated definition, by taking account of record count, we would be in danger of drawing false conclusions if a low or high record count was actually being driven by a low or high visit count. Another benefit of scarcity as a key analytical measure is that it provides a more robust measure of changes in distribution; provided, that is, that any provisional conclusions drawn based upon it are checked against both visit count and record count separately. Scarcity is mathematically undefined when record count is zero, regardless of the value of visit count.

The analysis presented in the next two sections repays careful inspection by providing clear evidence of the value of scarcity when attempting to diagnose potentially lost and new sites, rather than relying solely upon record count.

Lost sites

Based solely upon record count, two sites stand out as being in apparent danger of being lost, if not quite lost yet: Calvert Jubilee and Finemere Wood. Note that Calvert Jubilee, although defined slightly differently in terms of 1km squares, was also noted as a cluster in danger in the 2023 Green Hairstreak species champion report. The details are given in **Table 5**, first the number of 1km squares in, then the scarcity for, each cluster (scarcity is given both as a decimal and a fraction). The scarcity for each cluster is then broken down into three periods spanning the period 2014-2023.

		Scarcity			
Cluster	**1km squares**	**Overall**	**2014-2017**	**2018-2020**	**2021-2023**
Calvert Jubilee	4	4.0 (352/89)	3.2 (178/55)	4.7 (150/32)	12.0 (24/2)
Finemere Wood	8	41.0 (2133/52)	29.6 (1005/34)	34.4 (550/16)	289.0 (578/2)

Table 5: Dingy Skipper clusters in danger based on 2014-2023 visit counts, record counts, and scarcity

Looking only at record counts (the denominators in the fractions), the rapidly declining trend is apparently very clear for both clusters. However, looking also at the visit counts (the numerators in the fractions), we reach a rather different conclusion:

- For Calvert Jubilee, the very low recent record count is largely mirrored by a much lower record count. Hence, the most recent value of scarcity is bigger than the two

older values, but not so much so as to raise serious alarm bells. The near-absence of records from 2021-2023 is quite likely to be simply the result of a large reduction in footfall between 2018-2020 and 2021-2023. We can conclude that, record counts notwithstanding, Calvert Jubilee is *not* a cluster from which the Dingy Skipper population is in imminent danger of being lost.

- Finemere Wood, on the other hand, has an overall scarcity of 41, much higher than for Calvert Jubilee, indicating that the population in that cluster is significantly less abundant. The two older values of scarcity are consistent with the overall value, but the most recent value is an order of magnitude higher; the number of visits did not change significantly between 2018-2020 and 2021-2023, but the record count plummeted. We can conclude that the Dingy Skipper population at Finemere Wood *does* appear to be in danger of being lost, and it should be a key site for investigation in 2025, unless the records for 2024 show a clear improvement.

No isolated 1km square has sufficient records to provide credible evidence of being in danger of being lost.

New sites

There is no credible evidence of any newly-colonised or newly-discovered clusters.

For isolated 1km squares, the record counts for individual years are low (single figures or zero), so even when they are aggregated across several years, scarcity is still often mathematically undefined. Hence we need to be especially cautious in interpreting the data, and accept that any potential conclusions are thus more risky. With this caveat, and based only upon record count, three isolated 1km squares stand out as potential new (or flourishing), or newly-discovered, sites: Broadwell disused airfield, White Horse & Dragon Hills, and Owlpit Copse. The details are given in **Table 6**, and clearly demonstrate the necessity of including both visit count and record count in the analysis (decimal scarcity is shown as NA for "not applicable" where record count is zero).

		Scarcity			
Name	**1km square**	**Overall**	**2021-2023**	**2018-2020**	**2014-2017**
Broadwell disused airfield	SP2406	2.1 (15/7)	1.2 (6/5)	6.0 (6/1)	3.0 (3/1)
White Horse & Dragon Hills	SU3086	7.6 (53/7)	6.2 (37/6)	NA (7/0)	9.0 (9/1)
Owlpit Copse	SU5873	25.8 (103/4)	22.8 (91/4)	NA (6/0)	NA (6/0)

Table 6: UTB Dingy Skipper potential new sites based on 2014-2023 visit counts, record counts and scarcity

Broadwell disused airport was noted as a new site in the 2023 Green Hairstreak species champion report, although almost certainly newly-discovered, or previously unreported, rather than newly-colonised. It is not a heavily-visited site, but Dingy Skipper is readily found there, and despite the recent increase in record count, the data suggest that its scarcity at the site has not changed significantly in the last ten years.

Dingy Skipper scarcity has not changed significantly for White Horse and Dragon Hills over the last ten years either, but for a different reason: record counts and visit counts were both low in 2014-2017 and 2018-2020, and both increased greatly in 2021-2023. Here the data suggest a stable colony to which a lot more attention is suddenly being paid.

Owlpit Copse, on the other hand, is a site where the case for new colonisation can plausibly be made. After a low number of visits and no records for both 2014-2017 and 2018-2020, there has been a very large increase in visit count, resulting in four records. It will be interesting to see the visit count and record count from 2024.

Other sites of note

The isolated 1km square (and BBOWT site) Warren Bank is worthy of note, with a very idiosyncratic pattern of records from 2014-2023. There were seven records from 2014-2016, so Dingy Skipper was known at the site, albeit not in large numbers. There followed a period from 2017-2021 of no records at all, when it might reasonably have been assumed that the species had been lost from the site … and then in 2022, a whopping 24 records, and none again in 2023. The visit count for Warren Bank is low but consistent, varying between 1 and 5 from 2014-2022; there were 5 visits in 2022, but this is not anomalously high compared to the previous years. Frustratingly, there were no visits to the site in 2023. There appears to be more to be learned about Warren Bank from a Dingy Skipper perspective!

Five random 1km squares have been visited fewer than ten times and produced a Dingy Skipper record, but only East Ilsley to South (SU2979) really deserves an honourable mention by name, with a scarcity value of 1: it has been visited once (in 2018) and that visit produced a Dingy Skipper record. A lucky one-off, or indicative of closer scrutiny?

Final food for thought

It is interesting to look back at the previous species champion report covering the years 2011 and the early part of 2012, and to look again at two of the specific sites and topics discussed in that report

Photographs of the disused railway lines (DRL) at Westcott and near Salden Wood were included in the previous report. It was noted that the former was still in good shape five years after the photograph was taken, whereas the latter was becoming increasingly overgrown (the report actually said “in another ten years time the Salden Cutting … will probably have completely scrubbed over”, but noted that the re-opening of the East-West rail link between Bicester and Milton Keynes might save the colony if mitigation measures could be built into the project). Sad to say, only Westcott appears to remain viable:

- In the current report, Westcott is identified as a cluster of four 1km squares. With a scarcity of 29.7, it is a mid-table cluster, not easy territory in which to find the species, but nonetheless there are records for every year from 2014-2023.
- Records for Salden Wood DRL, on the other hand, dried up alarmingly quickly after the previous report, with none at all after 2013 (hence, it does not feature in this report at all). On the other hand, whilst visits to the three 1km squares covering

Salden Wood DRL (SP8130, SP8131 and SP8231) decreased noticeably, they didn't disappear completely. 2014 was the last year when all three were visited, but there were only two years from 2015-2023 when none were visited. Although the re-opening of the East-West rail link has closed access to Salden DRL itself, there is still footpath and bridleway access on either side in the three 1km squares in question.

The previous report discussed the almost total loss of Dingy Skipper from deciduous woodland territory, as the result of deterioration of woodland rides, citing (but not identifying) just one remaining small colony in north Bucks. Bernwood Forest was discussed as an interesting case in point, where the species had moved out of the wooded territory into the surrounding meadows. The current report identifies Bernwood as a cluster of five 1km squares, and confirms the continuing presence of Dingy Skipper in the area, with records for every year from 2014-2023, and scarcity of 11.9 indicating a more abundant colony than at Westcott. In particular, the Bernwood cluster includes the M40 Compensation area, which the previous report noted had been colonised by Dingy Skipper over the previous five years. The current report confirms that Dingy Skipper has consolidated its presence there, with only one year from 2014-2023 without at least one record.

Appendix 1: Dingy Skipper clusters

Name	Key Words	1km squares	Scarcity	First In	Last In	Consistency
Paices Wood	Paices Wood	2	3.3 (285/87)	2014	2023	100%
Calvert Jubilee	Calvert Jubilee	4	4.0 (352/89)	2014	2022	89%
Ivinghoe	Church End, College Lake, Incombe Hole, Ivinghoe Beacon, Pitstone Quarry, Steps Hill	19	4.3 (2764/650)	2014	2023	100%
Oakley Hill	Chinnor Hill & Quarries, Oakley Hill	3	4.7 (429/92)	2014	2023	100%
Aston Upthorpe	Aston Upthorpe, Lids Down, Oven Bottom	13	4.7 (1349/289)	2014	2023	100%
Blue Lagoon NR	Blue Lagoon NR	2	4.8 (67/14)	2015	2023	78%
Crog Hill	Crog Hill, Devils Punchbowl, Hackpen Hill, Pigtrough Bottom, Scary Hill, Seven Barrows	15	4.8 (909/189)	2014	2023	100%
Grangelands	Andridge Common, Bradenham, Brush Hill, Buttlers Hangings, Coombe Hill, Grangelands,	41	5.1 (6567/1291)	2014	2023	100%

	Rifle Range, Sands Bank, Saunderton, Small Dean Bank, Yoesden					
Wasing	Wasing, Woolhampton	2	5.3 (48/9)	2018	2023	83%
Lardon Chase	Hartslock, Lardon Chase, The Holies	8	5.6 (2576/457)	2014	2023	100%
Aston Rowant	Aston Rowant & surrounding hills (Bald Hill, Pyrton Hill, Shirburn Hill, Watlington Hill)	10	5.8 (2223/386)	2014	2023	100%
Hillesden	Hillesden	2	7.0 (14/2)	2015	2018	50%
Aston Clinton	Aston Clinton, Crong, Dancers End, Wendover Canal & Woods	7	7.5 (1767/236)	2014	2023	100%
Kingston Coombes	Kingston Coombes	2	8.0 (32/4)	2020	2022	67%
Millenium Common	Millenium Common, Appleford, Sutton Courtenay	2	8.5 (17/2)	2020	2022	67%
Decoy Heath	Decoy Heath, Padworth	4	8.5 (494/58)	2014	2023	100%
Wapseys Wood	Bulstrode, Wapseys Wood	3	8.8 (79/9)	2014	2021	75%
Warburg	Warburg, Bix Bottom	4	8.9 (805/90)	2014	2023	100%
Watts Bank	Cleeve Hill, Lambourn, Watts Bank	3	9.9 (318/32)	2014	2023	90%
Swyncombe Downs	Swyncombe Downs	3	10.5 (325/31)	2014	2023	80%
Greenfield	Greenfield	2	11.0 (33/3)	2017	2022	33%
Bernwood	Bernwood, M40 Compensation Area	5	11.9 (1809/152)	2014	2023	100%
Homefield Wood and environs	Fingest, Frieth, Homefield Wood, Moorend Common, Strawberry Bank, Swains Wood, Turville, Watlington Hill	21	13.9 (2278/164)	2014	2023	100%
Bushy Bank	Bushy Bank	3	14.0 (365/26)	2017	2023	86%
Whitchurch	Whitchurch	2	16.5 (33/2)	2019	2022	50%

Prestwood LNR	Prestwood LNR	5	20.9 (1045/50)	2014	2023	90%
Bottom Wood	Bottom Wood	2	23.5 (47/2)	2021	2021	100%
Rushbeds	Ludgershall, Rushbeds	4	26.4 (1187/45)	2014	2022	89%
Holtspur Bottom	Holtspur Bottom	2	27.0 (728/27)	2014	2023	70%
Greenham Common	Bowdown, Greenham & Cookham Commons, Pyle Hill	9	29.0 (1217/42)	2014	2023	100%
Westcott	Westcott, Wotton	4	29.7 (1396/47)	2014	2023	100%
Sheepdrove	Sheepdrove	2	30.0 (150/5)	2014	2016	100%
Hall Farm, Dagnall	Hall Farm, Dagnall	2	34.7 (104/3)	2021	2023	100%
Harwell Campus	Harwell Campus	2	36.0 (72/2)	2020	2021	100%
Finemere Wood	Finemere Wood, Greatmoor, Grendon & Doddershall Wood,	8	41.0 (2133/52)	2014	2023	80%
MOD Arncott West	MOD Arncott, Whitecross Green Wood	4	45.4 (1044/23)	2014	2023	80%
Gomm Valley & Wood	Gomm Valley & Wood	2	52.7 (316/6)	2018	2023	83%
Howe Park Wood	Howe Park Wood, Tattenhoe Park	4	76.7 (460/6)	2015	2023	44%
Cholsey	Cholsey, North Stoke, Mongewell	4	105.5 (422/4)	2014	2020	29%
Radley Lakes	Radley Lakes	2	129.6 (648/5)	2017	2022	67%

Appendix 2: Dingy Skipper isolated 1km squares

The entry at the bottom of the table has an anomalously high number of visits, which appear from the map to represent a particularly dedicated recorder “visiting” their own garden over a period of three years.

Name	**1km square**	**Scarcity**	**First In**	**Last In**	**Consistency**
Warren Bank (BBOWT)	SU6585	0.6 (19/31)	2014	2022	44%
Broadwell disused airfield	SP2406	2.1 (15/7)	2014	2022	33%

Harleyford Lane, Temple	SU8384	6.8 (34/5)	2015	2021	57%
White Horse & Dragon Hills	SU3086	7.6 (53/7)	2017	2023	43%
Field by Bloom Wood	TQ0191	10.0 (20/2)	2017	2019	67%
MOD Arncott East	SP6216	16.8 (84/5)	2017	2023	57%
Penn Jubilee Wood	SU9192	19.3 (58/3)	2020	2022	100%
Owlpit Copse	SU5873	25.8 (103/4)	2022	2023	100%
Gravelly Way & Penn Wood	SU9095	28.0 (112/4)	2014	2023	40%
Hook Norton Transect	SP3632	31.3 (219/7)	2014	2023	50%
Dry Sandford Pit	SU4699	108.5 (217/2)	2020	2021	100%
Gavray Meadows, Bicester	SP5922	151.3 (454/3)	2021	2022	100%
Ardley Quarry	SP5327	161.0 (322/2)	2015	2022	25%
Wyfold	SU6881	296.3 (1185/4)	2021	2023	67%

Appendix 3: Dingy Skipper random 1km squares

Scarcity varies very widely for the random 1km squares, from the lucky strike value of 1 for East Ilsley to South, to more than 500 for Wallingford and Harwell. Here we can think of the highest values of scarcity as indicating increasing likelihood that the record(s) is/are a case of mistaken identity.

Name	**1km square**	**Scarcity**	**From**
East Ilsley to South	SU4979	1.0 (1/1)	2018
Touchen-end Transect	SU8876	3.7 (33/9)	2020
Linkenholt	SU3559	4.0 (4/1)	2008
Eastbury	SU3579	6.0 (6/1)	2023
Fognam Farm to South	SU2979	6.0 (6/1)	2009
Newton Longville Transect	SP8330	6.5 (13/2)	2022
West Woodhay chalk pit	SU3861	7.0 (7/1)	2020
Farnecombe	SU3077	8.0 (8/1)	2023
Furze Hill, Meadow	SU5174	10.0 (10/1)	2020
Claydon House	SP7125	16.0 (16/1)	2021
Fayland	SU7888	16.0 (16/1)	2020
Bottom Farm, Mapledurham	SU6777	16.0 (16/1)	2017
Ash Grove Plantation to South	SU9498	24.0 (24/1)	2015
Quarrendon	SP8015	25.0 (25/1)	2023
Tingewick Meadows	SP6532	27.0 (27/1)	2020
Great Missenden to North	SP8802	30.0 (30/1)	2022

Wooburn Sands by fishing lake	SP9236	34.0 (34/1)	2023
Stonesfield	SP3916	38.0 (38/1)	2020
Swinley Forest	SU8665	40.0 (40/1)	2022
RSPB Otmoor	SP5513	60.0 (60/1)	2020
Oxfordshire golf club	SP6804	77.0 (77/1)	2020
MOD Otmoor	SP5712	85.5 (171/2)	2023
Highenden	SU8695	87.0 (87/1)	2013
Fobney Island	SU7071	114.0 (228/2)	2021
Wytham Woods	SP4508	116.0 (116/1)	2022
Emmer Green	SU7277	147.0 (147/1)	2020
Chilswell Valley	SP5003	157.5 (315/2)	2022
Stoke Common	SU9885	165.0 (165/1)	2022
Basildon	SU5976	172.0 (516/3)	2018
Sparsholt	SU3587	221.0 (221/1)	2007
Astwood	SP9447	264.3 (793/3)	2022
Wildmoor Heath	SU8463	265.0 (265/1)	2023
Little Linford Wood Transect	SP8345	316.0 (316/1)	2019
Sydlings Copse Transect	SP5509	317.0 (317/1)	2017
Greys Green Golf course	SU7179	342.0 (342/1)	2020
Moor Copse, Cottage Field	SU6373	343.0 (343/1)	2007
Benson	SU6191	459.0 (459/1)	2016
Wallingford	SU6089	502.0 (502/1)	2018
Harwell	SU4989	592.0 (592/1)	2015