

Butterflies 2017

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There were sufficient mild days at the start of 2017 for butterflies to be seen in all standard weeks other than week four (22nd to 28th January). Small Tortoiseshells, Red Admirals and Peacocks were all sighted in the first half of January and Brimstone first showed in early February. On 20th February, a fine day, all four species were seen, including 15 Brimstones.

Comma eventually declared spring on the March 9th when 19 were seen, together with 67 of the other four species. Small White, the first "hatching", emerged on 21st March and before the month was over Speckled Wood, Green-veined White, Orange Tip and Holly Blue were also flying.

In April we saw a prompt start for other spring species starting with Green Hairstreak on the 7th. Large White followed the next day. Grizzled Skipper and Duke of Burgundy both showed quite early on the 19th, Small Copper on the 22nd and Dingy Skipper on the 29th. The migrant Painted Lady also arrived quite early with two noticed during the month, on the 11th and the 22nd.

In May emergences continued apace with Small Heath, Brown Argus, Small Blue, and Common Blue all flying by the 10th. A gap of two weeks then led to sightings of Meadow Brown on the 25th and Large Skipper on the 31st.

A brief pause in new species ended with a cascade of June emergences beginning with early flights of Dark Green Fritillary and Ringlet on the 10th; Essex Skipper on the 11th; Small Skipper and the earliest ever White-letter Hairstreak on the 13th; Marbled White on the 14th; early Silver-washed Fritillaries on the 17th; Purple Hairstreak and the earliest ever Purple Emperors on the 18th; early White Admiral on the 19th, and Gatekeeper on the 20th. The first migrant Clouded Yellow was sighted on the 23rd. The main surprise of the month however was a Camberwell Beauty on the 24th. There were no reports of Black Hairstreak this year.

Chalkhill Blue was the last resident species to emerge, on the 1st July (another fairly early date). A welcome surprise was a Wood White on the 10th July, possibly having wandered into the county from Northamptonshire.

The weather up to this point in the year had generally been favourable for butterflies to develop, fly and breed. No species' flight period had begun late and most had started either slightly early or very early. Unsettled weather however then set in for much of the rest of July and well into August leading to reduced counts and fewer records in what would normally be the peak of butterfly abundance.

Once the weather had improved autumn was largely uneventful except for notable numbers of Red Admirals and it was this species that closed the butterfly season with the last flight on 23rd November.

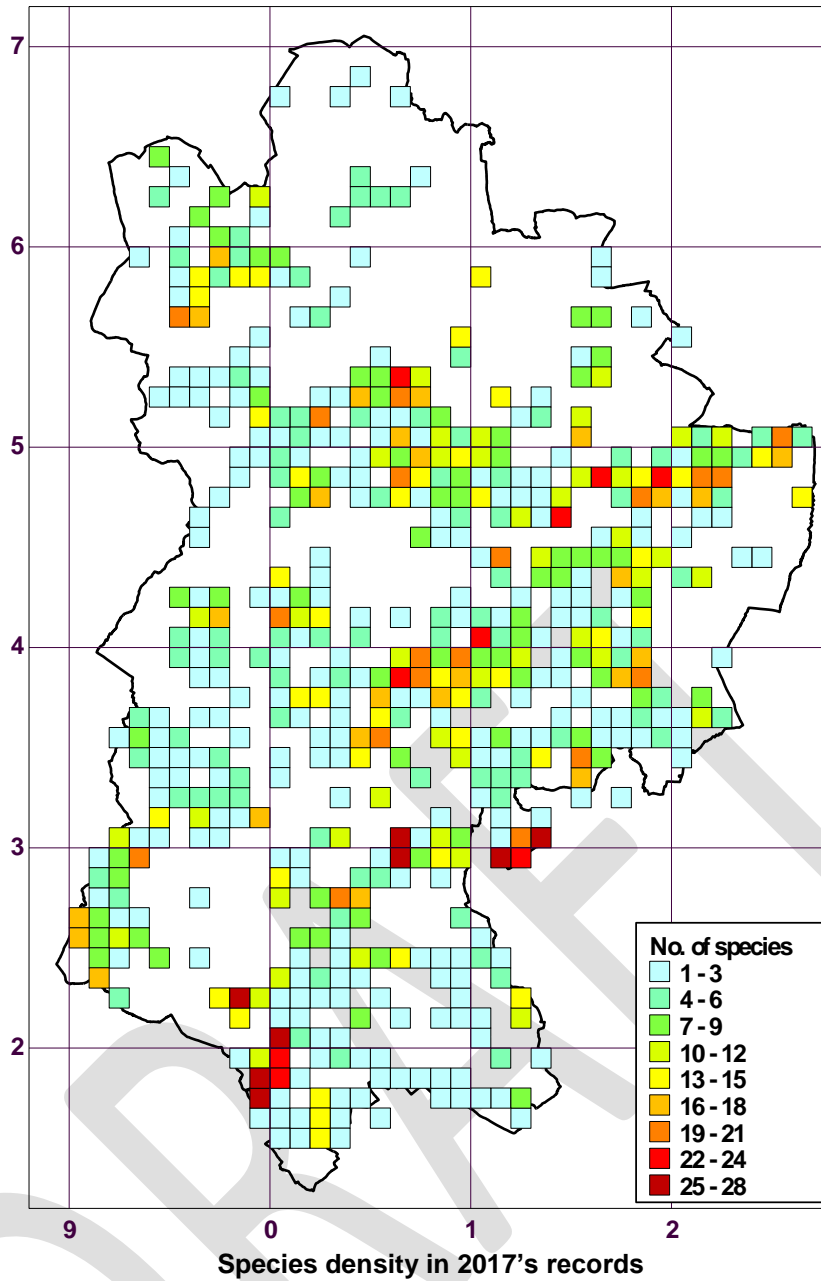
Wall Brown sadly wasn't reported again and is now feared lost from the county.

Scientific Names and Taxonomic Order

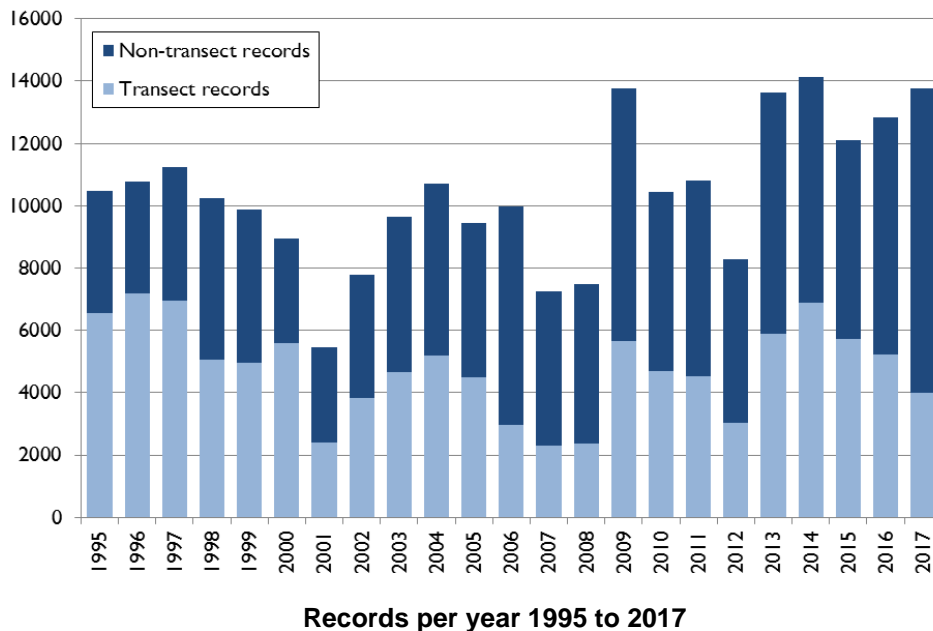
These have been changed from prior reports to follow the latest thinking by taxonomists: Agassiz, D.J.L.; Beavan, S.D.; Heckford, R.J. (2015). Dataset: Checklist of the Lepidoptera of the British Isles - Data. Resource: Checklist of the Lepidoptera of the British Isles [Agassiz, Beavan & Heckford] (amended 19/2/2016). Natural History Museum Data Portal (data.nhm.ac.uk) <https://doi.org/10.5519/0093915>

Analysis of Data

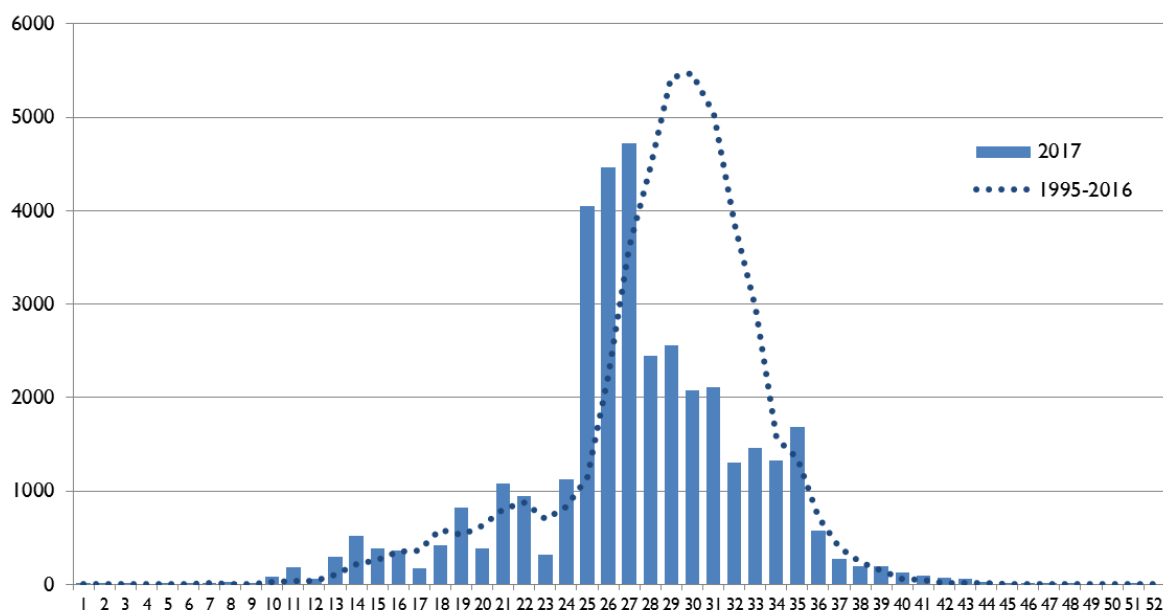
At the time of analysing records for this report (1st February 2018) 13,769 records had been received and computerised, containing reports of 51,105 adults from 545 1km squares. Records were analysed at this date and may be subject to minor revision.



4007 records were from transects and 9762 records were from other sources, mostly casual recording. The latter is a larger proportion than for recent years and this has usefully added to our knowledge of species distribution, raising the 1km square counts for many species above their usual amounts and setting a new record high for several species.



The graph showing the number of adults per week per 10,000 records per year shows an unusual peak during weeks 25 to 27 (18th June to 8th July). This corresponded with the peak abundance of three of the most common species, Ringlet, Meadow Brown and Marbled White, during fine weather before subsequent unsettled weather suppressed recording and abundances in the rest of July and August.



2017 versus 1995-2016: Adults per week per 10,000 records per year

Transects

The total number of adults and numbers of species () for the twelve recent transects were:

	2013	2014	2015	2016	2017	
Dunstable Downs	4770 (29)	4090 (30)	3217 (32)	2789 (31)	2224 (29)	Wilf Powell
Harrold Odell CP	*	*	*	*	1350 (20)	Lindsey Alton
Knocking Hoe	2836 (26)	2505 (23)	2161 (22)	2107 (24)	1989 (25)	Graham Bellamy
Mowsbury Hill	*	1174 (19)	361 (18)	504 (19)	590 (18)	Chris Wedge
Old Warden Tunnel	474 (23)	687 (20)	418 (22)	323 (18)	442 (20)	Keith Balmer
Pegsdon Hills	*	1358 (26)	1270 (24)	1314 (25)	1744 (26)	Ken Winder
Potton Wood	2712 (22)	2691 (20)	1841 (20)	1897 (16)	3079 (21)	Ian Woiwod,
Priory CP	1218 (18)	936 (18)	355 (19)	*	*	
Sharpenhoe Clappers	10571 (29)	6138 (30)	6704 (27)	5951 (27)	3666 (28)	David Chandler
Totternhoe Quarry	3707 (26)	2634 (27)	1452 (28)	1797 (26)	*	
Whipsnade Downs	4427 (29)	3767 (30)	3037 (28)	1422 (27)	*	
Whipsnade Zoo	3159 (27)	5020 (27)	4623 (27)	4272 (26)	4020 (26)	Shea Marshall

* Mowsbury Hill and Pegsdon Hills (a new route) were first walked in 2014. Harrold Odell Country Park was first walked in 2017. Priory Country Park was not walked in 2016 or 2017. Totternhoe Quarry and Whipsnade Downs were not walked in 2017.

Our thanks again go to those that consistently walk and record these transects for 26 weeks each year, allowing scientific year-on-year comparisons to be made. These data are also combined at the national level with data from other transects as part of the Butterfly Monitoring Scheme.

Note that the lack of transect data from Totternhoe Quarry and Whipsnade Downs this year has affected analysis of these two sites and also the overall statistics of species such as Chalkhill Blue and Duke of Burgundy which were well represented by these transects' data in previous years' reports.

Species Reports

In the following species reports "ya" is an abbreviation for "year average". Analyses look back to 1995 unless stated otherwise.

Hesperiidae (Skippers)

Dingy Skipper *Erynnis tages tages*

The transects tell a mixed story with counts both above and below average: Dunstable Downs 82 (5ya 66); Knocking Hoe 18 (4ya 20); Old Warden Tunnel 0 (5ya 4); Pegsdon Hills 6 (3ya 10); Sharpenhoe Clappers 12 (5ya 32); Whipsnade Zoo 99 (4ya 56). Other reported sites were: Brogborough landfill; Coronation Pit; near Lidlington; MVMCP; Rookery Pit; Sandhouse Lane NR; Sandy Smith NR; Stewartby; Totternhoe Old Quarry; Whipsnade Downs. Abundance and distribution overall were close to the 5ya. The main flight period from 29th April to 16th June, with a peak in week 21 (21st to 27th May) was normal. A lone partial second brood individual was seen on the Whipsnade Zoo transect on 13th August. The largest count of 31 was on Whipsnade Downs on 24th May (Steve Clark).

Grizzled Skipper *Pyrgus malvae*

Reported abundances have generally been in decline since a large peak in 2012 and 2017 continued this trend. Abundances are now below the average since 1995 but the reported 18 1km squares distribution is still above the average of 14 for that period. Reported non-transect sites were: near Brogborough; near Lidlington; MVMCP; Rookery Pit; Totternhoe Quarry; Wigmore Park; near Wymington. The only two transects with records were Dunstable Downs 27 (5ya 51) and Whipsnade Zoo 20 (4ya 14) which bucked the downward trend. The first and last records (19th April and 7th June respectively) were both on the Dunstable Downs transect. Peak abundance was in week 21 (21st to 27th May).

Essex Skipper *Thymelicus lineola*

Counts were below average on those transects where it is present, e.g. Dunstable Downs 4 (5ya 15); Sharpenhoe Clappers 5 (5ya 22); Whipsnade Zoo 50 (4ya 59). It was reported from 28 1km squares containing suitable grassland, near Bedford; near Center Parcs; near Fancott; near Holwell; near Leighton Buzzard; in the Marston Vale; near Sandy and on several chalk sites. The reported flight period began in mid-June as normal but ended a little earlier than usual in the first week of August.

Small Skipper *Thymelicus sylvestris*

Counts on the transects were below average, e.g. Dunstable Downs 8 (5ya 18); Pegsdon Hills 16 (3ya 30); Sharpenhoe Clappers 15 (5ya 62); Whipsnade Zoo 243 (4ya 309). As a percentage of all records 1.30% was its second lowest year (1.19% in 2011) and 1.39% of all adults reported is its sixth worst year. Numbers rose rapidly from 18th June and peaked in week 27 (2nd to 8th July), falling quickly to low numbers after mid-July, which then continued to the end of August. The largest count on 26th June was of at least 30, from Stanford Wood and an adjacent field (Roger Murphy).

Large Skipper *Ochlodes sylvanus*

The transects generally returned low counts for Large Skipper, e.g. Dunstable Downs 8 (5ya 26); Knocking Hoe 0 (4ya 9); Old Warden Tunnel 8 (5ya 14); Pegsdon Hills 9 (3ya 10); Sharpenhoe Clappers 12 (5ya 27); Whipsnade Zoo 18 (4ya 32), but at Potton Wood they were raised with 59 (5ya 42). Overall, as a percentage of all records 1.79% is the species worst year (it was 2.07% in 2008). The 1.38% of all adults reported was the species fourth-worst year suggesting that the species continues to struggle a little, though it is still widespread, reported from 90 1km squares, its seventh-highest year. Counts were generally in single figures with only 11 records of ten or more. These largest counts were from Bromham Lake LNR; Chicksands Wood; Clapham Park; College Wood; Harrowden; Home Wood, Northill; Maulden Wood; Stanford Wood. The flight period from 31st May to 14th August with a peak in week 26 (25th June to 1st July) was normal.

Pieridae (Whites, Yellows)

Wood White *Leptidea sinapis*

On 10th July an adult Wood White was photographed in Felmersham Gravel Pits (Sarah Royal) which is about eight miles from the nearest known population in Northamptonshire. It will be worth surveying for this species in suitable sites towards the county border as it is known to wander and might re-establish here.

Orange Tip *Anthocharis cardamines britannica*

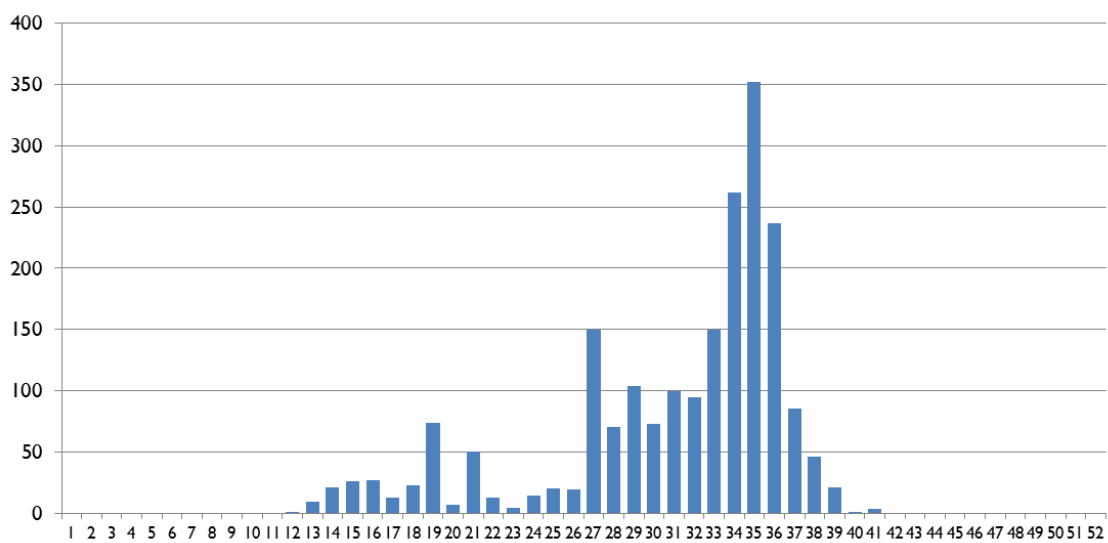
The transect counts overall suggest it was a near-average year for Orange Tip, e.g. Dunstable Downs 19 (5ya 32); Potton Wood 23 (5ya 20); Sharpenhoe Clappers 12 (5ya 13); Whipsnade Zoo 13 (4ya 10). In overall recording however, possibly due to the ease of recording males, Orange Tip had a good year setting new record highs for the number of records (583 vs 474 in 2011), number of adults (1043 vs 1037 in 2011) and 1km squares (197 vs 185 in 1999). The bulk of sightings were made during weeks 14 to 21 (2nd April to 27th May) as its season faded quite quickly after the peak in week 19 (7th to 13th May). The largest count of 14 was from the route 51 cycle path near Willington on 15th April (Mike Hallsworth).

Large White *Pieris brassicae*

Large White counts on the transects were all below average: Dunstable Downs 15 (5ya 51); Knocking Hoe 12 (4ya 28); Pegsdon Hills 9 (3ya 48); Potton Wood 87 (5ya 99); Sharpenhoe Clappers 48 (5ya 60); Whipsnade Zoo 29 (4ya 141). Its reporting however was widespread, the 204 county-wide 1km squares being second only to the 231 of 2009. As usual the second brood was more abundant than the first with its greatest numbers throughout July and August.

Small White *Pieris rapae*

Most transect counts for Small White were low, e.g. Dunstable Downs 64 (5ya 203); Knocking Hoe 21 (4ya 81); Pegsdon Hills 47 (3ya 55); Potton Wood 14 (5ya 44); Whipsnade Zoo 9 (4ya 56). The count at Sharpenhoe Clappers however was higher than usual (325 vs 5ya 236). There was an interesting peak in abundance during weeks 34 to 36 (20th August to 9th September) which showed on several sites across the county, but most clearly on the Sharpenhoe Clappers transect accounting for its raised total. Was this spike due to local breeding success or a migration perhaps? As a percentage of all records 5.43% was the second lowest year (the lowest is 4.65% in 2014) and the 4.05% of all adults reported is lower than average suggesting the species didn't fare as well as others. The 198 county-wide 1km squares however was the third highest total (200 in 2013; 246 in 2009) so it remains a widespread species that may be encountered almost anywhere.



Weekly abundance for Small White showing the late summer peak in weeks 34 to 36

Green-veined White *Pieris napi sabellicae*

Counts on the transects were rather variable: Dunstable Downs 21 (5ya 32); Knocking Hoe 1 (4ya 6); Pegsdon Hills 2 (3ya 2); Potton Wood 256 (5ya 288); Sharpenhoe Clappers 94 (5ya 60); Whipsnade Zoo 0 (4ya 6). Over all records the species appears to have had a rather unsuccessful year with most statistics suggesting it to have been around its third worst. The 193 1km squares recorded however was its fifth-highest year and it is still one of our most widespread species.

Clouded Yellow *Colias croceus*

There was a small cluster of sightings, possibly involving the same individuals, in the Brogborough Tip/Rectory Wood area and another in the Broom Gravel Pits area. The remaining records were well scattered across the county. The main period for sightings was mid-July to late August, peaking in early August, though there were a handful more between late September and late October. Abundance and distribution were slightly above average for this migrant species.

Brimstone *Gonepteryx rhamni rhamni*

Brimstone counts on the transects were both above and below average, e.g. Dunstable Downs 77 (5ya 131); Knocking Hoe 17 (4ya 21); Pegsdon Hills 127 (3ya 54); Potton Wood 69 (5ya 71); Sharpenhoe Clappers 66 (5ya 134); Whipsnade Zoo 39 (4ya 32). The ease of identifying male Brimstones at a distance may disproportionately favour the recording of this species in casual records as the overall statistics suggest that the species had a good year, about its third-best. It was reported from all parts of the county and its 248 1km squares far exceeded its previous high of 204 in 2014, and was second only to Red Admiral's 259. As usual most records reported low single-digit abundances but 30 were counted on 15th August on section six of the Pegsdon Hills transect, plus another 15 over the other sections.

Nymphalidae (Browns, Fritillaries, Aristocrats)

Speckled Wood *Pararge aegeria tircis*

Although reported from a new high of 215 county-wide 1km squares (previously 200 in 2009) abundance was generally low with below average counts on all transects, e.g. Dunstable Downs 26 (5ya 37); Potton Wood 234 (5ya 270); Sharpenhoe Clappers 71 (5ya 122). The three broods built as usual, with each larger than the one before, the peaks being in mid-April, early June and late August. The 224 day flight period from 24th March to 3rd November was long, but not unprecedented. Only 17 double-digit counts were reported, mostly from woodlands, the largest being of 26 from footpaths near Center Parcs on 27th August (Caroline Gilby).

Small Heath *Coenonympha pamphilus pamphilus*

It was an above average year for this species as indicated by most transects, e.g. Dunstable Downs 270 (5ya 183); Knocking Hoe 200 (4ya 155); Pegsdon Hills 198 (3ya 77); Sharpenhoe Clappers 141 (5ya 101). Only Whipsnade Zoo showed a reduction to 661 from the 4ya of 805. As a percentage of all adults reported 4.32% was the species' highest ever (previously 4.11% in 1996) suggesting that it fared better than some other species. The 90 1km squares reported was also a new high exceeding 2013's 88. The reported abundance of the first and second broods was similar (approximately 1155 and 1034 respectively) but the second produced the much larger peak of 357 in week 35 (27th August to 2nd September) which included the largest count of at least 70 at The Lodge (RSPB Sandy) on the ridge and summer trails (Tim Robson).

Ringlet *Aphantopus hyperantus*

The largest count of 2000 was from Fancott Woods and Meadows SSSI on 30th June where they were "Everywhere in large numbers" (Colin Le Boutillier). Chicksands Wood, College Wood and Maulden Wood also had counts of 100 or more. The transect total at Potton Wood (1089) was the highest since 1992 (1145) and well above the 5ya of 507. Counts were also up on the transects at Old Warden Tunnel 239 (5ya 118) and Whipsnade Zoo 547 (4ya 365), but down on others such as Dunstable Downs 140 (5ya 412); Knocking Hoe 19 (4ya 70) and Sharpenhoe Clappers 130 (5ya 270), so the picture is clearly uneven. The species ranked second for the number of adults reported. 14.82% of all adult butterflies reported was its third-best year and the 1km square count of 145 was its fifth-best year, so it is doing well overall. The peak weeks for reporting were 25 to 27 (11th June to 8th July) being a couple of weeks earlier than usual, as for other species recording and/or abundance probably affected by the unsettled weather.

Meadow Brown *Maniola jurtina jurtina*

Potton Wood's transect count of 951 was the highest since 1990 and well above the 5ya of 271 whereas Dunstable Down's count of 371 was half the 5ya of 743. The other transects fell in between these extremes: e.g. Knocking Hoe 1035 (4ya 951); Pegsdon Hills 669 (3ya 343); Sharpenhoe Clappers 806 (5ya 1367); Whipsnade Zoo 813 (4ya 793). Meadow Brown's 19.76% of all adult butterflies reported is the highest since 2012 and its seventh-best year suggesting an improvement in the species fortunes overall, though as we can see from the transect data there is considerable local variation. This species also was recorded in more 1km squares (227) than ever before (221 in 1999). The species ranked first as usual for the number of adults reported. Abundance peaked during weeks 25 to 27 (18th June to 8th July), a couple of weeks earlier than usual, probably curtailed by the unsettled weather.

Gatekeeper *Pyronia tithonus tithonus*

There was a slight improvement in the fortunes of this species with above recent averages on most transects, e.g. Dunstable Downs 217 (5ya 162); Knocking Hoe 178 (4ya 115); Pegsdon Hills 158 (3ya 96); Whipsnade Zoo 463 (4ya 345); but down on Sharpenhoe Clappers 137 (5ya 150). Abundances though still remain well below what they were a decade or more ago. The largest record of at least 50 was from the Knocking Hoe area on 1st August (Caroline Gilby). The flight period from 20th June to 1st September was normal with a peak in week 28 (9th to 15th July), seemingly less affected than other species by the warm spring and unsettled summer weather.

Marbled White *Melanargia galathea serena*

Transect totals suggest the species had a below average year, e.g. Dunstable Downs 140 (5ya 198); Knocking Hoe 83 (4ya 186); Pegsdon Hills 84 (3ya 168); Sharpenhoe Clappers 395 (5ya 844); Whipsnade Zoo 543 (4ya 608). Other sites with double-digit counts were: Bedford (Norse Road); Bromham Lake LNR; Broom Gravel Pits; Chalton; Duck End NR; Henlow Grange; Kempston Church End; Leagrave Common; Linslade Woods; Milton Ernest; Pulloxhill; Mowsbury Hill; MVMCP; Sharpenhoe Clappers; Upper Sundon; Whipsnade; south of Woburn. In a 2ha field near Whipsnade Downs sown with a seed mix in 2015 there were estimated to be about 1000 flying on 8th July, and also similar numbers in another treated field nearby (Jon Powell). 5.38% of all adults reported were of this species which is below the 6.02% average since 1995. The large number of casual records produced a new 1km square highest count of 110 (106 in 2014), spread mostly along the chalk and the greensand ridge, but with a large scattering of sites elsewhere. Most records were from 14th June to 26th July, with a handful of later records. The peak in weeks 25 to 27 (18th June to 8th July) was a couple of weeks earlier than usual, probably as a result of the subsequent unsettled weather.

Silver-washed Fritillary *Argynnis paphia*

This was another species that had an excellent season, exceeding previous totals (from 2014) for number of records 150 (127); adults 447 (265) and 1km squares 35 (33). Most reports came early in the flight period during weeks 25 to 27 (18th June to 8th July) before the weather became unsettled, with numbers then dropping markedly for the remaining six weeks. It was reported from the following woods: Chicksands Wood; College Wood; Dedmansey Wood; Home Wood, Northill; King's Wood, Heath and Reach; King's Wood, Houghton Conquest; Marston Thrift; Maulden Wood; Odell Great Wood; Potton Wood; Salem Thrift; Putnoe Wood; Upper Alders; Washer's and Daintry Woods; West Wood. Potton Wood's transect total of 102 doubled 2014's prior record of 51. There were also reports of wanderers, often in gardens, including a *valezina* in a Bedford garden on 20th July which appeared to lay several eggs on the garage wall, though none could be found in a subsequent search (Keith Balmer). *Valezinas* were also reported from Chicksands Wood and Salem Thrift. A male was photographed emerging from a pupa on the side of a flower pot in a Leighton Buzzard garden on 21st June (Bob Iadarola & Heather Iadarola). A female was observed ovipositing on a conifer in a private wood near Tingrith on 10th July (Janice Robertson). A male displaying a large amount of melanism on both the fore and rear wings was photographed in Potton Wood on 2nd July (Ian Woiod).

Dark Green Fritillary *Argynnis aglaja aglaja*

The transect totals were: Dunstable Downs 2 (5ya 13); Knocking Hoe 12 (4ya 10); Pegsdon Hills 4 (3ya 10); Sharpenhoe Clappers 105 (5ya 168); Whipsnade Zoo 16 (4ya 13). Other reported locations were Barton Hills, a Dunstable garden and a lane in Upper Sundon. Sharpenhoe Clappers retains the strongest population with 50 counted on the transect on 1st July (David Chandler). Over all statistics the season ranked about tenth best.

White Admiral *Limenitis camilla*

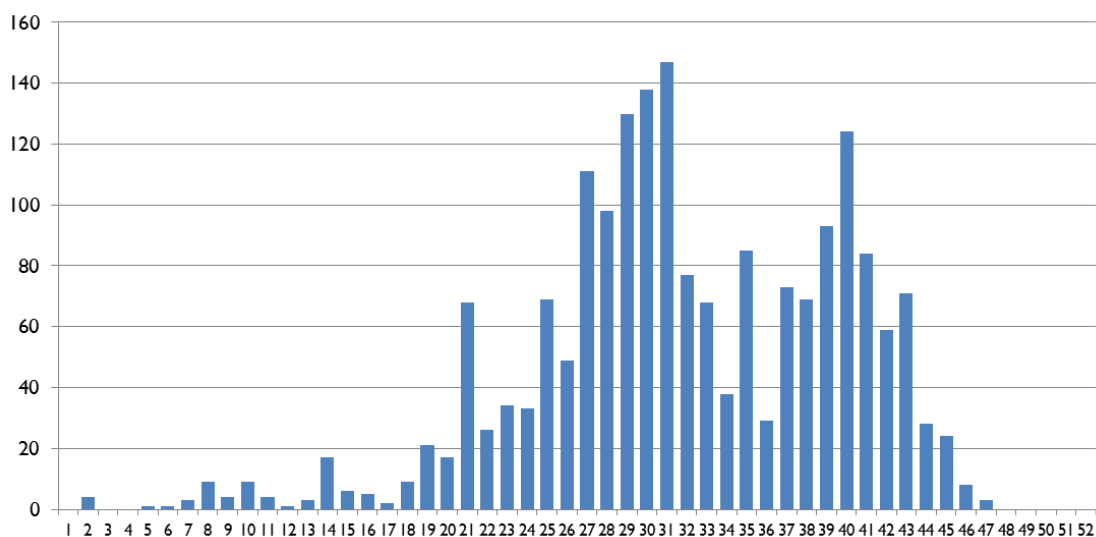
There was a slight improvement in reported abundances this season though the 36 adults counted were still well below the yearly average since 1995 of 68. Sightings between the 19th June and 25th July were from Chicksands Wood (20); College Wood (1); Home Wood, Northill (1); Kings Wood, Heath and Reach (1); Maulden Wood (7); West Wood (3). It was not reported from Marston Thrift (last record was in 2006) despite visits by several people during the flight period.

Purple Emperor *Apatura iris*

This year the species was reported from Chicksands Wood (18th June to 10th July); Maulden Wood (24th June to 21st July); a private wood near Tingrith (10th to 19th July); and a garden in Whipsnade (7th July). The largest count, of three males, was at Chicksands Wood on 20th June (Steve Clark). Of the 28 reported only one was clearly identified as a female, in Maulden Wood on 21st July, the final sighting of the season. A range of behaviours were reported including soaring at tree-top height; flying between trees; settling on horse dung; and fly-bys including one close enough to hear the wing beats (Tim Robson).

Red Admiral *Vanessa atalanta*

This species had an excellent year. The well-distributed 1km square count of 259 was the largest ever recorded for any species. 1081 records were submitted, surpassing 2006's 786, though that year's abundance (2380) still exceeds 2017's (1952). The flight period from 8th January to 23th November was the longest for any species. Numbers climbed steadily from early May to a first peak in early August followed by a second in early October. It remained a common sight throughout the autumn, especially on ivy flowers, until the cold weather set in.



Weekly abundance for Red Admiral

Painted Lady *Vanessa cardui*

It was a fairly average year for this migrant species with 104 adults reported from 57 1km squares, predominantly in the south and in the east of the county, and also around Bedford. The two largest counts were of five each, on 3rd June in Whipsnade (Jon Powell) and 29th July at Sharpenhoe Clappers (Mike Hallsworth and David Hallsworth) corresponding with two peaks in abundance. Most records fell between late May and late September.

Peacock *Aglais io*

It was another poor season for this species. Transects typically returned counts around one third of normal but at Sharpenhoe Clappers only two were seen (5ya 44). Only 2011 returned a lower percentage of records and percentage of all adults. The new summer brood was again recorded with low abundance, probably exacerbated by the unsettled weather coinciding with its emergence. Low points in Peacock's abundance in 2004 and 2011 were both followed by strong peaks three years later, so hopefully the pattern will repeat. Distribution remained good however as the 181 well-distributed 1km squares reported were above the average of 151 since 1995.

Small Tortoiseshell *Aglais urticae*

Abundances were below average on all the transects but recording overall suggests the species had quite a good season, ranking about seventh-best. The post-hibernation abundance was quite strong with over 500 adults reported, peaking at the start of April. The first brood peaked in week 25 (18th to 24th June) and the second in week 32 (6th to 12th August). It was reported from all parts of the county and set a new record high of 245 1km squares (exceeding 2014's 234) ranking third, behind Brimstone (248) and Red Admiral (259). The largest wild count of 25 was from Kempston on 14th June (Hugh Griffiths and Jenny Griffiths) but a total of 112 were bred through from larvae rescued from a threatened nettle patch in Riseley, of which 63 were released on 10th August (Charlotte Tenneson). There were six records submitted of larval webs, in May and July.

Camberwell Beauty *Nymphalis antiopa*

On 24th June an adult was photographed in Maulden Wood feeding on sap leakages and resting in dappled sunlight (David Bailey). It was not sighted again and its origin is a matter of speculation. (One is also known to have been seen in Sussex on 17th June).

Comma *Polygonia c-album*

Comma had an excellent season setting a new record high in every statistic. This was the last of the five overwintering species to emerge, waiting until 9th March when 19 were seen. 238 post-hibernation adults had been reported by the end of May. The first brood then began to emerge in early June leading to a very strong peak in weeks 25 to 27 (18th June to 8th July). Numbers remained high before fading in early August. The second brood didn't produce an obvious peak as numbers then remained flat until early October when they finally began to tail off. None was seen after 3rd November. The largest abundances were reported from woodlands with up to 40 seen in Chicksands Wood on 26th June, including egg-laying females (Richard Revels). There was an interesting find of a larva maturing on hazel leaves at Duck End NR on 31st July (Sue Raven). Hazel isn't cited as a larval food plant in most text books though a handful of internet references were subsequently found.

Riodinidae (Metalmarks)

Duke of Burgundy *Hamearis lucina*

Dunstable Downs' transect highest weekly count was three on 10th May and its annual total was six, typical of the low counts at this end of the scarp. Without the usual transect data from its two main sites at Totternhoe Quarry and Whipsnade Downs we need to look to other records. At Totternhoe Quarry there were 25 records totalling 135 adults, the peak being of 19 on 16th May from a research project by Cambridge University (Matthew Hayes). On Whipsnade Downs there were 18 records totalling 147 adults, the largest count of 15 was on 14th May (Paul Perryman). There was also one record of a single adult from Totternhoe Knolls on 30th April (Sheila Brooke). The flight period was from 19th April to 31st May, both dates being quite early for the species, but not unprecedented.

Lycaenidae (Coppers, Hairstreaks, Blues)

Small Copper *Lycaena phlaeas phlaeas*

Small Copper had a rather better year than in 2016. The percentage of records of this species (0.92%) was exactly the average for the whole period since 1995. The number of 1km squares (53) was also much better, its fourth highest year. (The highest was 75 in 2004). The total number of adults reported (334) was also a new record, exceeding 2016's 324. The Lodge (RSPB Sandy) / Sandy Heath area again accounted for the lion's share of the records but there was a pleasing scattering of records along the greensand ridge; on the chalk; around Bedford; in the Marston Vale and in the north-west of the county. The largest count of at least 50 was at The Lodge (RSPB Sandy) on 28th August (Tim Robson).

Purple Hairstreak *Favonius quercus*

This species was reported from Beeston (The Baulk and the Riddy); Chicksands Wood; Clapham Park; College Wood; Maulden Wood; the Potton area (including Carthagea golf course); the Putnoe Wood area; Sandy Heath and The Lodge (RSPB Sandy). The main reported flight period was from 18th June to 29th July, with just one more record of two adults on 15th August. The largest count of at least eight was from a tall oak in Beeston on the evening of 26th June (Tim Robson). Sunny evenings are often a productive time to survey for this species which rarely wanders far the canopy and are therefore probably very under-recorded. It is hard to draw any conclusions about the success of the season from so few records, but there is nothing among the data to suggest that it was out of the ordinary.

Green Hairstreak *Callophrys rubi*

Reported from Dunstable Downs; Houghton Regis Chalk Pit; Knocking Hoe NNR; near Lidlington; MVMCP; Pegsdon Hills; Sharpenhoe Clappers; Totternhoe Old Quarry; Whipsnade Downs; Whipsnade Zoo. Transect counts were slightly below average at Dunstable Downs 12 (5ya 20); Sharpenhoe Clappers 17 (5ya 25) and Whipsnade Zoo 19 (4ya 37) but they were slightly above at Knocking Hoe 19 (4ya 15) and Pegsdon Hills 12 (3ya 9). This reflects the overall statistics which suggest that 2017 was a rather average year, though it did start very early on 7th April. (The earliest was 5th April in 2002). The largest count was 11 on Whipsnade Downs on 16th May (Peter Ford). Peak abundance was during weeks 19 to 21 (7th May to 27th May).

White-letter Hairstreak *Satyrrium w-album*

This species seems to have had a short but successful season being reported from Chicksands Wood; Clapham Park; Cockayne Hatley; College Wood; Hill Rise LNR; Home Wood, Northill; Maulden Tree Nursery; Maulden Wood; the bridleway alongside Putnoe Wood; Potton (Carthagea bridleway). The total adult count of 107 was second equal with 2010's, but was still eclipsed by the 427 of 2006. The reported flight season started on 13th June and completed exceptionally early on 19th July, both dates being the earliest recorded for this species. Abundance had already peaked by the end of June, about three weeks earlier than normal. There was also a rare record of a pupa in the wild photographed at Sallowsprings plantation on 26th June (P.Ostler).

Black Hairstreak *Satyrrium pruni*

No reports of Black Hairstreak were received this year.]

Small Blue *Cupido minimus*

This species wasn't seen wandering this year and therefore was reported only from chalk sites: Barton Hills NNR (1); Bradger's Hill (2); Dunstable Downs (4); Sewell Cutting (2); Sharpenhoe Clappers (29); Sundon Chalk Pit and Upper Sundon (5); the Totternhoe area (Limeworks, Quarry, Knolls, cliffs) (345). The largest count on 2nd June, from the Totternhoe area, was accompanied by the comment "yes - that is 221!! At least that number" (Chris Walpole). There was no evening roost count on the Totternhoe cliff base this year which traditionally produced a large total, so the overall adult count of 388 was below the average since 1995. The 1km square count of 12 was just below the average since 1995 (14) and exactly half of 2004's record year of 24. Most reports were of the first brood which was seen between 10th May and 21st June, but 14 adults were of a partial second brood seen between 23rd July and 28th August.

Holly Blue *Celastrina argiolus britanna*

We are in the declining-abundance period of this species' cycle at the moment with the first brood larger than the second (198 and 60 adults respectively) as was the case in 2016 (which totalled 568 adults). The first brood flew from 30th March to 16th June and the second brood from 5th July to 5th September, both being normal for the species. As usual a large proportion of records were from gardens across the county.

Brown Argus *Aricia agestis*

Brown Argus abundances on the transects were around average, e.g. Dunstable Downs 112 (5ya 134); Knocking Hoe 42 (4ya 58); Pegsdon Hills 44 (3ya 27); Potton Wood 5 (5ya 1); Sharpenhoe Clappers 30 (5ya 35); Whipsnade Zoo 100 (4ya 110). Overall statistics also suggest that it was a fairly average year for the species. Although there was a good scattering of reports from many parts of the county the two sites that returned the largest counts were Whipsnade Downs with 40 on 26th May (Peter Clarke and Bob Clift), and The Lodge (RSPB Sandy) with 23 on 28th August (Tim Robson), representing the peak counts of each brood.

Common Blue *Polyommatus icarus icarus*

Abundances on the transects were generally below recent averages, e.g. Dunstable Downs 132 (5ya 282); Knocking Hoe 116 (4ya 198); Old Warden Tunnel 23 (5ya 22); Pegsdon Hills 82 (3ya 72); Sharpenhoe Clappers 133 (5ya 320); Whipsnade Zoo 208 (4ya 271). Overall statistics suggest that numbers are a bit below average at the moment but Common Blue can be a bit of a boom-and-bust species with an exceptionally good year in 2010 and poor years in 2007 and 2012. 2017 was nowhere near those lows and its widespread 129 1km squares was second only to 2010's 138. The largest count of at least 50 was from Sundon Chalk Pits on 25th July (David Anderson).

Chalkhill Blue *Polyommatus coridon*

Transect abundances were generally below average, e.g. Dunstable Downs 282 (5ya 298); Knocking Hoe 151 (4ya 306); Sharpenhoe Clappers 1018 (5ya 2742); Whipsnade Zoo 58 (4ya 63), but were up slightly at Pegsdon Hills 162 (3ya 144). There were only 39 non-transect records of this species submitted, adding the following other chalk sites to the list of locations: Barton Hills NNR; Harlington Hill Chalk Pit; Totternhoe Quarry; Upper Sundon; Whipsnade Downs. No wanderers were reported this year. Most sightings were between 1st July and 12th September but a late female was spotted on Knocking Hoe NNR on 22nd September (Graham Bellamy).

Acknowledgements

We are very grateful for the efforts of the 281 people listed here who reported their sightings online, directly or via newsgroups. We apologise if any name has been inadvertently omitted.

S.Allen, P.Almond, L.Alton, D.Anderson, E.Anderson, G.Anderson, J.Anderson, J.Arnold, B.Aucott, T.Austin, D.Bailey, C.R.B.Baker, P.M.Baker, C.Balmer, K.Balmer, P.Balmer, A.Banthorpe, M.Banthorpe, D.Barnes, R.Bashford, George Bellamy, Graham Bellamy, P.Bellamy, M.Bird, J.Bishop, S.Blain, N.Bowles, P.Bradley, S.Brooke, R.Broomfield, M.Bruce, A.Bucknall, C.Bucknall, A.Budd, L.Burgess, J.Burnett, P.Busby, C.Campbell, C.Carpenter, G.Carpenter, B.Cartwright, R.A.Cartwright, G.Castle, P.Ceconi, S.Cham, D.Chandler, A.Chapman, J.Chapman, K.Cheasman, S.Cheslyn-Curtis, A.Childs, P.Childs, A.Clark, R.Clark, S.Clark, P.Clarke, P.Clegg, B.Cliff, A.Cobb, J.Codling, J.Cook, T.Cook, B.Cooke, M.Cooke, S.Cooke, P.Cottier, L.Coulson, D.Crane, B.Cripps, C.Curd, J.Curd, C.Davies, Beth Davis, Brian Davis, G.E.Dawes, G.Dawes, J.Dawes, D.Dawson, I.Dawson, J.Day, G.Deane, L.Delayahu, K.Dicks, M.Dominey, A.Donnelly, A.Doody, E.Dunn, R.A.Dunn, R.Earwaker, R.Edwards, R.Egan, J.Emerson, J.England, A.Evans-Hill, L.Evans-Hill, S.Fahy, D.Fellman, D.Fisher, G.Fisher, S.Fisher, M.Fitzpatrick, A.Fleckney, D.Ford, P.Ford, M.Fowle, T.French, J.Galloway, J.George, W.George, C.Gilby, L.Girdlestone, D.Glenister, M.Glenister, P.Glenister, G.Goodall, S.Goodwin, L.Goodyear, J.Gray, S.Gray, A.Green, H.Griffiths, J.Griffiths, A.Grimsey, M.Gurney, B.Haines, D.Hallsworth, M.Hallsworth, S.Halton, J.Harding-Morris, C.Harrington, A.Harris, M.Harvey, M.Hayes, S.Hearle, B.Henry, N.Heptinstall, B.Hicks, J.Hicks, R.K.Hicks, M.Higgs, G.Hogg, R.Hogg, N.Hollis, P.Hollis, B.Hook, R.Hook, M.Hooper, D.Horsman, P.Howard, A.Hughes, B.Ladarola, H.Ladarola, T.Instone, D.Inward, D.James, F.James, A.Jones, M.Jones, D.Kay, F.Kay, M.Ketcher, I.Kimsey, A.King, K.King, J.Knight, R.Knock, D.Kramer, C.Le Boutilier, H.Lewis, G.Lumb, J.Lynch, P.Marshall, S.Marshall, T.Marshall, A.McLennan, E.Medley, T.Meehan, A.Middleton, R.Millard, J.Mitchell, T.Moon, D.S.Morrisey, R.E.Morrisey, H.Muir-Howie, J.Murphy, R.Murphy, B.Newbury, M.Newell, B.Nightingale, D.Norman, S.Northwood, B.O'Connor, D.Oakley-Martin, Mrs Odedra, D.Odell, J.O'Donoghue, J.O'Reilly, P.Ostler, A.Outen, J.Palmer, D.Parsons, I.Parsons, L.Parsons, B.Pedder, M.Pellicci, D.Pennington, P.Perryman, J.Pitts, L.Porter, J.Powell, W.Powell, A.Price, A.Proud, S.Raven, N.Reed, L.Reid, R.C.Revels, G.Richardson, S.Roberts, J.Robertson, T.Robson, K.Rogers, S.Royal, M.Runchman, M.Russell, J.Sawyer, D.Seabrook, R.Seabrook, E.Sharrock, J.T.R.Sharrock, A.Shaw, J.Shayler, M.Sheridan, C.Shortall, C.Sims, I.Small, C.Smith, T.Smith, T.Spencer, R.Spiers, B.Squires, A.Steele, C.Stennett, K.Stennett, S.Sullivan, L.Taylor, C.Tenneson, K.Thomas, S.Thompson, J.Ullyett, C.Wakely, M.Wallace, C.Walpole, M.Ward, C.Wardle, G.Warne, S.Warrington, C.Watts, C.Wedge, S.West, A.Whitney, E.Wildon, P.Wilkinson, I.Williams, M.Williams, S.Williams, T.Williams, N.D.Willits, K.Winder, D.Witherick, D.Withers, I.Woiwod, A.Wood, H.Wood, T.Wood, P.Wright, P.Young, P.Zimmer, Wildlife Trust Staff and Volunteers

Map produced using DMAP.

Keith Balmer and Peter Glenister are the Society's honorary joint butterfly recorders, a position they have held since 2003.

Flight periods and peak abundances in 2017

Species	Earliest Date	Latest Date	Peak Date	Peak Abundance
Dingy Skipper	29/04/2017	13/08/2017	24/05/2017	31
Grizzled Skipper	19/04/2017	07/06/2017	16/05/2017	12
Essex Skipper	11/06/2017	05/08/2017	01/07/2017	6
Small Skipper	13/06/2017	28/08/2017	26/06/2017	30
Large Skipper	31/05/2017	14/08/2017	26/06/2017	50
Wood White	10/07/2017	10/07/2017	10/07/2017	1
Orange Tip	28/03/2017	14/06/2017	15/04/2017	14
Large White	08/04/2017	27/10/2017	04/09/2017	40
Small White	21/03/2017	08/10/2017	04/09/2017	90
Green-veined White	28/03/2017	08/10/2017	08/07/2017	15
Clouded Yellow	23/06/2017	27/10/2017	10/08/2017	5
Brimstone	07/02/2017	03/11/2017	15/08/2017	30
Speckled Wood	24/03/2017	03/11/2017	27/08/2017	26
Small Heath	04/05/2017	15/10/2017	28/08/2017	70
Ringlet	10/06/2017	25/08/2017	30/06/2017	2000
Meadow Brown	25/05/2017	01/10/2017	05/07/2017	249
Gatekeeper	20/06/2017	01/09/2017	01/08/2017	50
Marbled White	14/06/2017	16/08/2017	21/06/2017	130
Silver-washed Fritillary	17/06/2017	17/08/2017	26/06/2017	30
Dark Green Fritillary	10/06/2017	13/08/2017	21/06/2017	42
White Admiral	19/06/2017	25/07/2017	26/06/2017	4
Purple Emperor	18/06/2017	21/07/2017	20/06/2017	3
Red Admiral	08/01/2017	23/11/2017	25/07/2017	30
Painted Lady	11/04/2017	10/10/2017	03/06/2017	5
Peacock	17/01/2017	25/10/2017	03/04/2017	14
Small Tortoiseshell	04/01/2017	01/11/2017	10/08/2017	63
Camberwell Beauty	24/06/2017	24/06/2017	24/06/2017	1
Comma	09/03/2017	03/11/2017	26/06/2017	40
Duke of Burgundy	19/04/2017	31/05/2017	16/05/2017	19
Small Copper	22/04/2017	27/10/2017	28/08/2017	50
Purple Hairstreak	18/06/2017	15/08/2017	26/06/2017	8
Green Hairstreak	07/04/2017	18/06/2017	16/05/2017	11
White-letter Hairstreak	13/06/2017	19/07/2017	26/06/2017	20
Small Blue	10/05/2017	28/08/2017	02/06/2017	221
Holly Blue	30/03/2017	05/09/2017	10/05/2017	6
Brown Argus	07/05/2017	28/09/2017	26/05/2017	40
Common Blue	10/05/2017	16/09/2017	25/07/2017	50
Chalkhill Blue	01/07/2017	22/09/2017	30/07/2017	340

Adults reported per month in 2017

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dingy Skipper				3	388	54		1				
Grizzled Skipper				6	103	2						
Essex Skipper						12	82	1				
Small Skipper						150	537	24				
Small/Essex Skipper						34	334	1				
Large Skipper					2	392	306	5				
Wood White							1					
Orange Tip			3	528	504	8						
Large White				18	71	113	772	551	283	18		
Small White			6	100	154	51	481	829	445	4		
Green-veined White			2	128	141	77	423	252	65	6		
Small/Green-veined White				26	10	24	108	94	13	2		
Clouded Yellow						1	11	24	1	5		
Brimstone		20	368	376	497	61	139	222	11	9	1	
Speckled Wood			5	197	201	492	219	545	223	30	1	
Small Heath					410	548	253	760	233	2		
Ringlet						4785	2775	12				
Meadow Brown					2	2844	5100	1898	255	1		
Gatekeeper						14	2211	539	2			
Marbled White						1080	1660	7				
Silver-washed Fritillary						188	225	34				
Dark Green Fritillary						114	174	1				
White Admiral						22	14					
Purple Emperor						15	13					
Red Admiral	4	14	20	32	126	186	560	316	293	350	51	
Painted Lady				2	13	21	36	20	9	3		
Peacock	2	3	77	300	167	12	183	82	14	4		2
Small Tortoiseshell	3	7	204	261	118	495	271	294	39	6	3	
Camberwell Beauty						1						
Comma			128	81	29	337	448	108	71	27	1	
Duke of Burgundy				10	279							
Small Copper				8	64	8	35	78	103	38		
Purple Hairstreak						20	53	2				
Green Hairstreak				28	132	3						
White Letter Hairstreak						65	42					
Small Blue					43	329	3	13				
Holly Blue			3	108	83	4	25	34	1			
Brown Argus					211	50	93	253	22			
Common Blue					394	286	468	620	31			
Chalkhill Blue							1682	914	31			

Summary of 2017's records of adults at 1st February 2018

Species	Records	Adults	Squares		Records (%)	Adults/All-species adults ¹ (%)				
			10km	1km		2013	2014	2015	2016	2017
Dingy Skipper	124	446	10	26	0.90	0.66	1.15	1.54	1.36	0.87
Grizzled Skipper	53	111	9	18	0.38	0.21	0.32	0.28	0.23	0.22
Essex Skipper	55	95	9	28	0.40	0.17	0.28	0.30	0.29	0.19
Small Skipper	179	711	16	72	1.30	1.00	1.39	1.78	1.56	1.39
Small/Essex Skipper	92	369	10	39	0.67	0.63	1.07	1.09	0.95	0.72
Large Skipper	247	705	18	90	1.79	1.13	1.86	1.40	1.57	1.38
Wood White	1	1	1	1	0.01	0.09	0.08	0.05	0.05	0.01
Orange Tip	583	1043	20	197	4.23	0.85	1.21	0.97	1.86	2.04
Large White	798	1826	20	204	5.80	6.09	1.58	4.11	3.68	3.57
Small White	748	2070	19	198	5.43	6.93	2.08	4.01	5.20	4.05
Green-veined White	637	1094	18	193	4.63	2.42	2.12	2.31	3.08	2.14
Small/G.V. White	77	277	12	48	0.56	1.40	0.30	0.54	1.12	0.54
Clouded Yellow	32	46	13	23	0.23	0.09	0.08	0.05	0.05	0.09
Brimstone	939	1704	20	248	6.82	1.83	2.85	2.50	3.39	3.33
Speckled Wood	846	1913	20	215	6.14	2.38	3.63	2.57	4.03	3.74
Small Heath	524	2206	17	90	3.81	3.03	3.44	2.55	2.91	4.32
Ringlet	583	7572	17	145	4.23	7.82	12.45	9.01	11.50	14.82
Meadow Brown	1251	10100	18	227	9.09	17.81	16.56	14.69	14.31	19.76
Gatekeeper	651	2766	19	184	4.73	3.89	5.44	5.75	4.49	5.41
Marbled White	364	2747	17	110	2.64	5.14	8.18	7.57	9.07	5.38
Silver-washed Fritillary	150	447	14	35	1.09	0.22	0.42	0.24	0.56	0.87
Dark Green Fritillary	74	289	6	13	0.54	0.77	0.46	0.57	0.40	0.57
White Admiral	27	36	4	7	0.20	0.03	0.06	0.06	0.03	0.07
Purple Emperor	23	28	4	7	0.17	0.02	0.05	0.03	0.03	0.05
Red Admiral	1081	1952	20	259	7.85	0.38	1.24	0.73	2.36	3.82
Painted Lady	92	104	17	57	0.67	0.09	0.12	0.33	0.32	0.20
Peacock	531	846	19	181	3.86	4.23	5.26	3.60	1.88	1.66
Small Tortoiseshell	780	1701	19	245	5.66	2.46	4.05	2.49	2.55	3.33
Camberwell Beauty	1	1	1	1	0.01	0.00	0.00	0.00	0.00	0.01
Comma	643	1230	20	198	4.67	1.23	1.14	1.38	1.20	2.41
Duke of Burgundy	48	289	4	7	0.35	0.20	0.55	0.39	0.46	0.57
Small Copper	127	334	16	53	0.92	0.27	0.23	0.33	0.70	0.65
Purple Hairstreak	35	75	4	17	0.25	0.04	0.13	0.10	0.08	0.15
Green Hairstreak	80	163	8	14	0.58	0.31	1.14	0.45	0.26	0.32
White-letter Hairstreak	32	107	4	12	0.23	0.08	0.07	0.12	0.04	0.21
Black Hairstreak	0	0	0	0	0.00	0.00	0.01	0.01	0.01	0.00
Small Blue	50	388	3	12	0.36	0.42	1.11	0.61	0.71	0.76
Holly Blue	208	258	16	88	1.51	0.24	0.14	0.59	1.23	0.50
Brown Argus	246	629	16	52	1.79	0.64	1.17	1.24	1.12	1.23
Common Blue	530	1799	19	129	3.85	4.14	5.11	4.51	3.31	3.52
Chalkhill Blue	190	2627	7	16	1.38	20.75	11.55	19.22	12.08	5.14
Overall	13769	51105	20	545						

¹ These values show the number of adults reported for each species relative to the number of adults reported for all species, allowing crude year-on-year comparisons to be made using data partially acquired by casual recording.