

Butterfly Transect at Markstakes Common: 2017 Summary



Photo: Green-veined White, Markstakes Common, 3rd June 2017, by Ian Seccombe

Ian Seccombe
19th December 2017

Introduction

This is the sixth consecutive year of recording butterflies at Markstakes using the United Kingdom Butterfly Monitoring Scheme (UKBMS) transect method. The Markstakes transect was walked on 25 of the 26 weeks specified by the UKBMS between the beginning of April and the end of September 2017. The recorders were Rupert Hall, Ian Seccombe and Ian Woolsey.

Sightings of butterflies occurred on 24 of the transect walks. In the weeks when recordings were made 686 butterflies were recorded. The week when the transect was not walked was right in the middle of the peak season. The UKBMS algorithm provides estimates for the missing week which gives a total *estimated* abundance of 780. Compared with 2016, when only 344 butterflies were recorded, 2017 was a very good year. The recorded number was almost double. In fact 2017 turned out to be the best year since these surveys started in 2012, exceeding the previous best (2014) *recorded* total by 14%.

Perhaps the most notable feature this year, apart from the increase in overall number, was the independent sighting (IS and IW) in consecutive weeks of a Purple Hairstreak, a new species for this transect. This took the total number of species recorded at Markstakes to 26. Another highlight in 2017 was the discovery of Brown Hairstreak eggs in Markstakes Lane, not far from the start of the transect and one of the most easterly recordings of Brown hairstreak eggs for Sussex.

Having surveyed Markstakes using a consistent methodology for six years we can now begin to identify a number of broad trends:

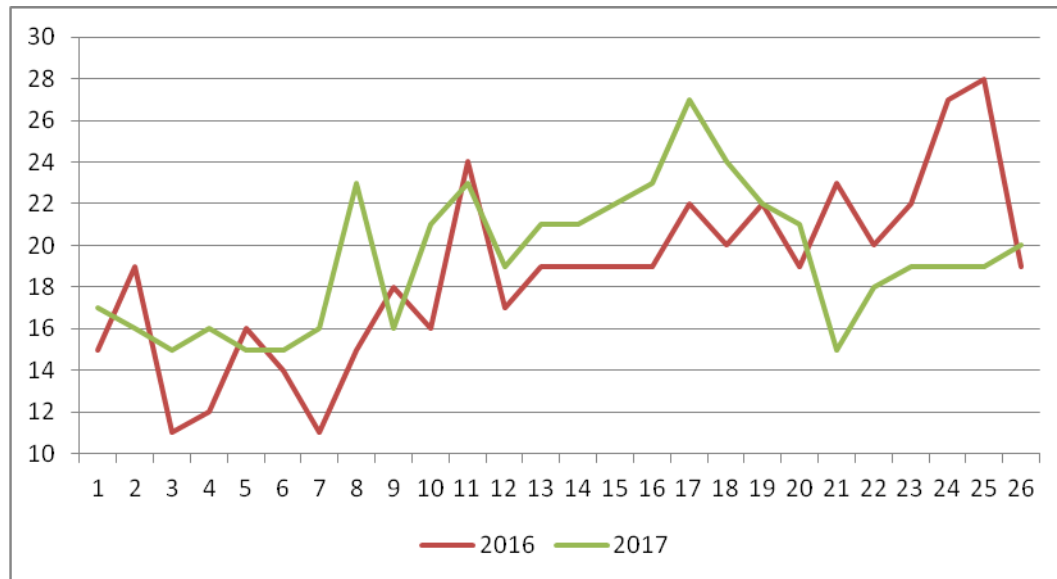
- despite an overall increase in 2017, many species are found in very small numbers, these numbers fluctuate year to year but are generally falling
- year on year we are seeing fewer spring butterflies at Markstakes
- sightings are increasingly dominated by a few, mainly grassland, species notably Meadow Brown and Gatekeeper
- the distribution of butterflies is becoming concentrated in fewer areas of Markstakes

Weather conditions

Chart 1 compares the temperature record for Markstakes in 2016 and 2017, illustrating that there was a warmer spring and mid-summer but a cooler late summer. As we will see later a warm spring does not necessarily mean more butterflies.

Chart 1 Temperature profile for Markstakes, 2016 and 2017*

* Values for missing weeks are interpolated



Trends

With a few notable exceptions most species were present in increased numbers compared with 2016. Numerically the largest increases were amongst Meadow Browns (+215), Gatekeepers (+67), Common Blue (+25), Silver washed fritillary and Ringlet (both +15).

Despite the overall increase several species recorded a decline. Numbers of Small Skipper, Brimstone, Orange Tip, Peacock and Marbled White were all down on the previous year. For the full list of species recorded, and their abundance, over the six years see Annex.

As in previous years, a few species account for the majority of all the sightings. Meadow Brown continues to be the most abundant butterfly in Markstakes, accounting for 46% of the total. This year two species - Meadow Brown and Gatekeeper - account for more than 62% of the total. In 2012 they represented just 42%.

Distribution

The records show a very uneven distribution of butterflies across Markstakes. Section G (the Mire) had 18 of the 24 species present in 2017 and 28% (194) of all recordings. Section E (which includes the butterfly glades) had 19 species and 16% of recordings. In contrast sections A and C had one and two species respectively and five or fewer records each.

Table 1 shows the number of species and butterflies in each section of the transect in 2017. In the past we have noted an increasing concentration of records with two thirds of all butterflies seen in just three sections (E, F and G)

in 2016. In 2017 that trend is reversed somewhat, these three sections accounting for 53% of the total.

Table 1 Number and distribution of species by transect section, 2017

Section	No. of species	No. of butterflies	% total
A	1	4	0.6
B	12	47	6.9
C	2	5	0.7
D	12	86	12.5
E	19	106	15.5
F	10	61	8.9
G	18	194	28.3
H	15	113	16.5
I	5	10	1.5
J	6	12	1.7
K	8	24	3.5
L	8	24	3.5

Meadow Brown was the only species recorded in all 12 sections. Other species with a widespread distribution included Silver-washed fritillary, which was present in 9 sections, while Large White and Peacock were both recorded in eight sections.

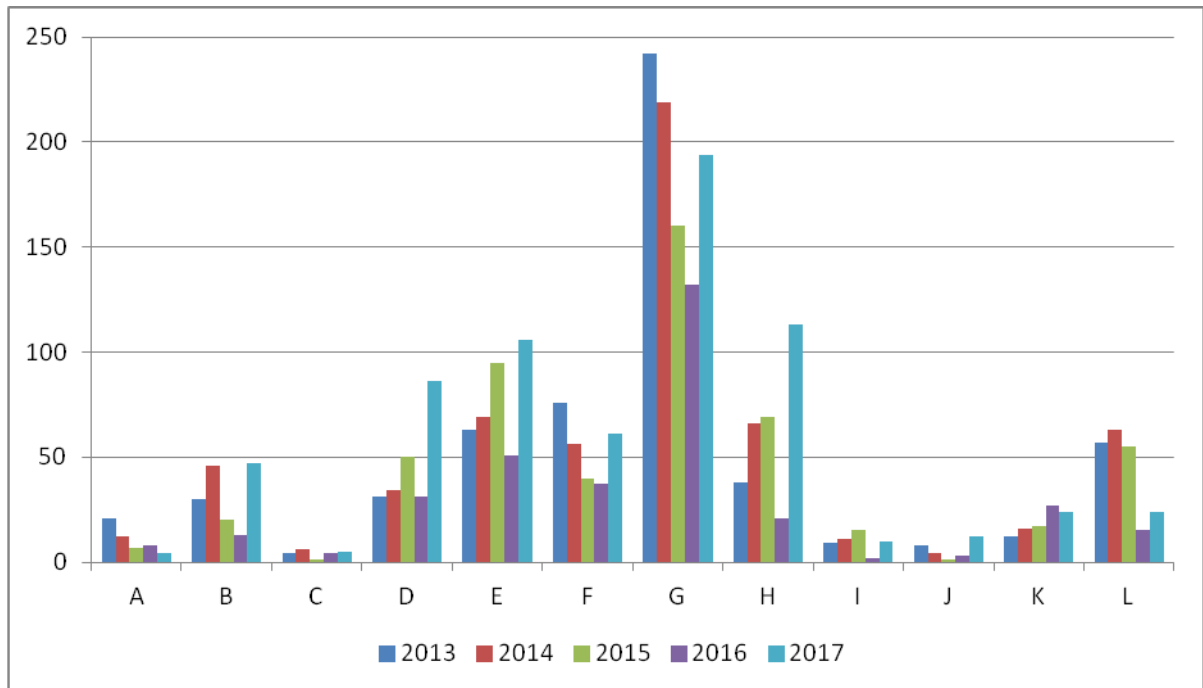
Table 2 shows the changing percentage distribution of butterflies by section over time. The main trends are the declining share of sections F,G (the mire) and L, and the increase in section H. Section L, which runs along the northern edge of the bracken field consistently accounted for about 10% of records each year up to and including 2015. In 2016 its share slumped to less than five percent and in 2017 was only 3.5%. Total number of butterflies in section L in 2017 was 24 compared with between 55 and 63 in the three years 2013 to 2015.

Table 2 Distribution (%) of butterflies by transect sub-section, 2013-17

Section	2013	2014	2015	2016	2017
A	3.6	2.0	1.3	2.3	0.6
B	5.1	7.6	3.8	3.8	6.9
C	0.7	1.0	0.2	1.2	0.7
D	5.2	5.6	9.4	9.0	12.5
E	10.7	11.5	17.9	14.8	15.5
F	12.9	9.3	7.5	10.8	8.9
G	40.9	36.4	30.2	38.4	28.3
H	6.4	11.0	13.0	6.1	16.5
I	1.5	1.8	2.8	0.6	1.5
J	1.4	0.7	0.2	0.9	1.7
K	2.0	2.7	3.2	7.8	3.5
L	9.6	10.5	10.4	4.4	3.5

Chart 2 below shows how the number of butterflies recorded in each section has varied from year to year over the past five years..

Chart 2 Abundance by transect section, 2013-2017



Flight Times

Chart 3 below compares the number of butterflies recorded each week in 2017 (the previous best year) and 2014. It shows that the early season was poorer than in 2014, with only 60 butterflies recorded in April and May compared with 104 in the same months of 2014. In fact spring 2017 was even worse than spring 2016 when we recorded 80 butterflies in an otherwise very poor year. Year on year the number of butterflies recorded in spring seems to be falling (Chart 4).

Chart 3 Number of butterflies by week, 2014 and 2017

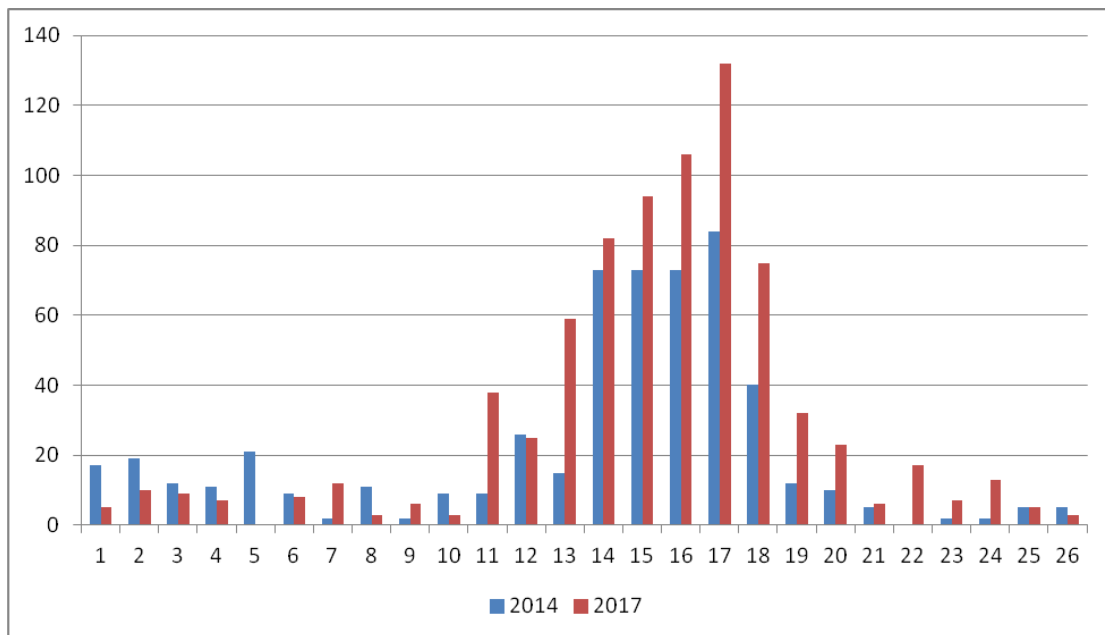
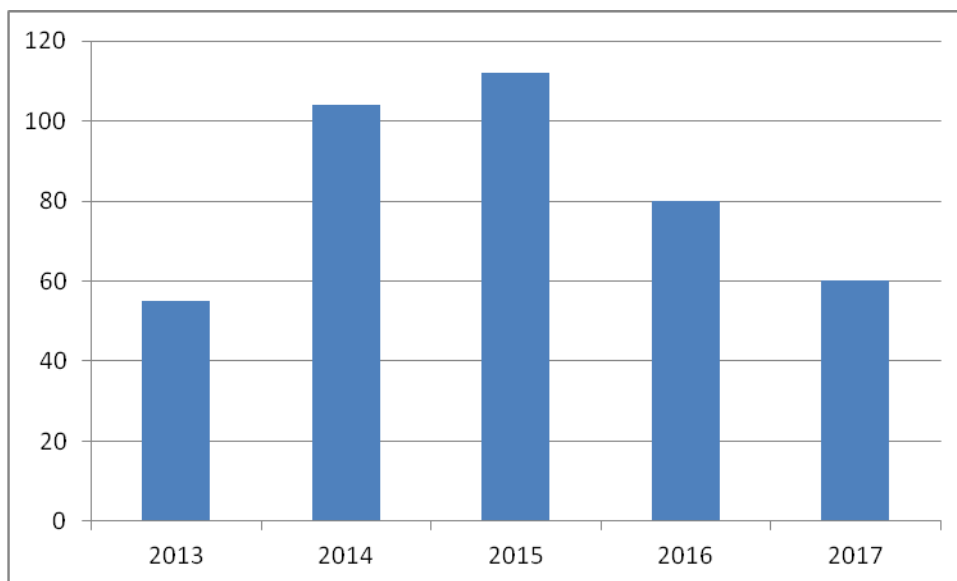


Chart 4 Number of butterflies recorded in April and May, 2013 to 2017



The overall increase in numbers is mainly due to a few weeks in mid-summer. In July 2017 we recorded 489 butterflies (that's more than we recorded in the whole of 2016) compared with 343 in July 2014. Numbers dropped off rapidly from mid August, and only 28 butterflies were recorded in September.

Annex: Number of butterflies recorded by species, 2012-2017

	2012	2013	2014	2015	2016	2017
Small Skipper	2	6	57	34	11	7
Large Skipper	4	4	5	5	1	4
Brimstone	8	29	32	41	23	15
Large White	22	73	33	24	23	30
Small White	3	4	12	2		2
Green veined white	6	16	2	3		6
Orange Tip	10	5	5	12	3	1
Clouded Yellow		2	1			
Small Copper	1	8	4	2	5	7
Holly Blue	1	1	3	2	4	4
Common Blue		15	33	14		25
White Admiral	9	10	6	2	4	5
Red Admiral	5	3	13	4	5	12
Peacock	8	20	51	42	48	25
Comma	4	10	6	10	7	8
Silver Washed Fritillary	14	35	28	15	12	27
Small Tortoiseshell		3	11	3	1	
Painted Lady		1		1	1	
Marbled White		6	7	14	16	14
Purple Emperor			1	1	1	2
Purple Hairstreak						1
Speckled Wood	54	55	29	21	32	43
Gatekeeper	36	44	63	77	45	112
Meadow brown	83	225	197	178	102	317
Small Heath	7	12	3	12	1	2
Ringlet		3		11	1	16