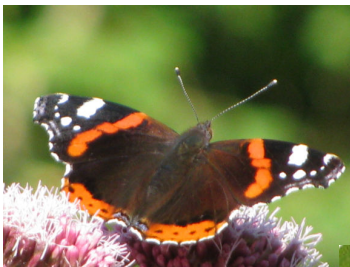




# **Lineover Wood Butterfly Report 2011**



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## **Results of 2011 butterfly survey in Lineover Wood**

2011 has been a disappointing year for butterflies. The total number of butterflies recorded on the transect decreased by 16% from 1643 last year to 1372 this year, which is the lowest count since 2002. The number of species has decreased from 27 to 25, but this is still a little above the average number of 24. The main reason for this decrease was the weather. The summer butterflies which fly in July and August dramatically reduced in number. Cool and cloudy weather conditions in these months was probably the main cause of this decrease.

### **Results**

The results are presented as tables and figures as follows:-

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The results of this year's survey are given in Tables 1 - 5 and Figures 1 - 8. A walk was carried out in every week. All walks were carried out in acceptable weather conditions in that the conditions met the criteria (temperature greater than 17C or greater than 13C and sunshine greater than 60%). However, for some of the walks, the weather was overcast and even if the temperature was 19 or 20C, the number of butterflies flying was greatly reduced and certainly much lower than on a warm sunny day. Table 1 gives weather conditions for each walk. The weather conditions in the days before a walk are not noted but do seem to also affect the number of butterflies flying.

The main features of the butterfly recording in 2011 are:

- Spring flight-time butterflies were up due to good weather in the spring, e.g. Orange Tip increased by 26%.
- Summer flight-time butterflies were greatly reduced due to poor weather, e.g. Gatekeeper reduced by 64%, Meadow Brown by 40%, Ringlet by 42%, Silver-washed Fritillary by 56%, Marbled White by 24%.
- Silver-washed Fritillary had its worst year since 2002.
- Green Hairstreak was recorded for the first time on the transect since 1999. 2 were recorded at Piccadilly.
- Marbled White continue to remain low in number, both in the meadow and in Dr Watkinson's field. 2009 – 2011 were poor years with numbers less than half the average since 1991.
- Speckled Wood produced the highest count since the transect began. These butterflies can fly in cooler and more overcast conditions. It was the most recorded butterfly on the transect overtaking the Meadow Brown and Ringlet.

- Autumn-flying butterflies increased due to the warm, sunny autumn. Many Red Admiral and Peacock were seen mainly on thistles and Hemp Agrimony next to the path by Mary's seat (unfortunately not on transect). (see Table 4).
- Autumn-flying butterflies continued flying well into the autumn with butterflies being seen in November (see Table 5).
- As there are more butterflies flying in summer than in spring or autumn, reductions in numbers of summer butterflies greatly outweighed increases in numbers of spring and autumn butterflies so overall numbers were much reduced.

### **Silver-washed Fritillary**

The number of Silver-washed Fritillary recorded on the transect this year has more than halved, dropping from 39 in 2010 to 17 this year. The average is 41. However several were seen on casual visits to the wood and a map showing where Silver-washed Fritillary were seen this year is given in Figure 6. This includes sightings made both off and on transect walks. This map shows that these butterflies were seen mainly in the usual areas and few were seen straying away from these places (as happens in good weather). I think we can put this disappointing year down to the poor weather which was around for much of the flight season.

Following sightings of the Valesina form in 2009 and 2010, it is good to report more sightings of this form this year. The Valesina is an aberration and only occurs in females. This year there were three sightings: one near Piccadilly, one in section 8 and one in section 9. (See Figure 6 for more precise positions.) It is interesting to note that, including casual records, there were about 38 reported sightings of Silver-washed Fritillary this year. If we assume that about a half (19) were females, 3 out of 19 is 16%. This is the average percentage of Valesina females seen in southern England mainly in Hampshire. There were 3 sightings also in 2007, 2009 and 2010. It seems to be that the Valesina form occurs as frequently here in Lineover now as it does in the woods of southern England.

### **Weather**

The summer of 2011 was quite notable. It was the warmest April since records began, the coolest summer for many years and a very warm autumn. Overall the year was also very dry. As the weather has a profound effect on butterfly activity, it is not surprising to see the strong effect of weather on the transect results.

Figure 1 shows the transect counts for each week. With the exception of 4 weeks in the summer, the counts are very close to or above average. It is the 4 weeks, weeks 15 – 18 which are most of July, when the counts are much lower than average. As usually the highest number of butterflies are recorded in these weeks, this has a huge effect on the total number of butterflies recorded. Of course it is the species that are flying at this time which are most affected eg Ringlet, Meadow Brown, Gatekeeper, Silver-washed Fritillary, Small White, Green-veined White etc.

It is thought that it was not just the cool, cloudy weather in July that caused such low counts. For example, for week 17, the walk was carried out in good weather (21C, 78%sun). All butterflies should have been very active in those conditions, but only half of the usual number of butterflies were recorded. It is likely that there were just not as many butterflies around. One explanation for this could be that in the dry warm spring, the grass was not as lush as usual and the butterfly larvae did not feed up adequately and did not pupate successfully. The summer-flying butterflies would have been larvae in the dry spring. Sections 3 and 7 were the most affected where total butterfly numbers were halved. The other sections were mainly in woodland where there are not as many summer butterflies anyway and would also have been a bit cooler and shadier in the spring.

### **Comparison with other sites**

Official results from butterfly transects in 2011 are not yet available, but unofficial reports from other Gloucestershire sites suggest that many species have performed similarly to those at Lineover. In particular, there were few butterflies around in July and August. The total for Lineover fell by 16%. The totals for Ravensgate and The Masts both fell by 40%. These are mainly grassland sites so have greater numbers of summer grassland species such as Ringlet and Meadow Brown. It is interesting that section 3 fell by 51% and section 7 by 39% which is about the same as the two grassland sites.

2011 saw another good year for the Orange Tip rising by 26%. This followed a good year in 2010. We have just received the national results for 2010 and Lineover Wood is mentioned as having one of the biggest increases in Orange Tip numbers. This could be attributed to effective management of the wood.

### **Management of the wood**

We have good management of the wood with coppicing and cutting back and widening of paths and rides. This has helped to improve the habitat for most of the species in the wood. Sections 1, 5, 6 and 8 showed increases in numbers of butterflies and this reflects recent management work carried out in these sections over the last few years. However with the weather having such a large effect in 2011, it tended overall to mask the results of management.

*(Photos on front cover by Tricia Atkinson and from Butterfly Conservation website)*

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	Total	Index
Mean Temp	17	19	17	19	17	18	14	18	19	22	18	20	24	23	19	18	21	25	20	19	21	17	21	21	20	23		
Mean Sun	53	100	100	90	100	75	89	78	10	100	60	25	100	80	50	71	78	49	100	10	100	89	100	43	41	100		
Small Skipper													13					1	5		2						21	21
Essex Skipper																											0	0
Small/Essex Skipper																											0	0
Large Skipper								1		2	6	4	24	5	9		1	1	1	1							55	55
Dingy Skipper					2																						2	2
Grizzled Skipper																											0	0
Clouded Yellow																											0	0
Brimstone	1	4	7	3	2	2							2					3	1		1				1		27	27
Large White					6	3	2	1		1		1	1	10	4	4	5	9	2	1	4						50	50
Small White			1				4									2	2	3	9			1	2				24	24
Green-veined White			1	22	17	11	8	17	7	1			4	14	14	3	19	14	12	8	6	2			1		181	181
Orange-tip	5	11	10	10	11	6	1	4																			48	48
Green Hairstreak					2																						2	2
Purple Hairstreak																											0	0
White-letter Hairstreak														1													1	1
Small Copper						1												1	1								3	3
Small Blue																											0	0
Brown Argus																							3				3	3
Common Blue						2	2	2	3	8	2							1	4	1	1		1				27	27
Chalkhill Blue																											0	0
Holly Blue				1			2																				3	3
Duke of Burgundy																											0	0
White Admiral																											0	0
Red Admiral				2	1	2		2	1		1	1	1	4	1	1	3	6	4	2	1	3	3	1			39	39
Painted Lady																											0	0
Small Tortoiseshell									1	1				1	2								1				6	6
Peacock	6	6	2	3	4					1							12	11	7	1				1			54	54
Comma	1	1					1	1					2	3	4	1	4	1	2		1						22	22
Dark Green Fritillary																											0	0
Silver-washed Fritillary																											17	17
Speckled Wood		3	5	11	12	13	13	10	14	7	7	4	13	8	3	3	9	22	23	21	22	12	14	20	21	9	299	299
Wall																											0	0
Marbled White											2	11	26	2			1										42	42
Gatekeeper																3	5	16	17	4	9						54	54
Meadow Brown											4	15	20	28	16	14	14	10	25	5	5	4		1			161	161
Small Heath										3									1								4	4
Ringlet											2	28	62	93	36	2	3	1									227	227
Total	7	19	28	52	57	40	33	38		24	22	54	137	199	104	33	83	101	115	45	54	22	24	23	22	10	1372	1372

Table 1. Lineover Wood - 2011 - Total butterflies recorded each week

**Table 2. Lineover Wood - 2011 - Total butterflies recorded in each section**

<b>Section</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>Total</b>
Small Skipper					4	2	1	2	12		21
Essex Skipper											0
Small/Essex Skipper											0
Large Skipper			3	1	8	4	8	13	18		55
Dingy Skipper			2								2
Grizzled Skipper											0
Clouded Yellow											0
Brimstone	2	1	4	4	7			5	4		27
Large White	1		6	2	3		14	14	10		50
Small White				5	5	1	5	1	7		24
Green-veined White	12		15	9	27	17	26	34	39	2	181
Orange-tip	6		2	8	4	6	8	8	5	1	48
Green Hairstreak				2							2
Purple Hairstreak											0
White-letter Hairstreak	1										1
Small Copper							2		1		3
Small Blue											0
Brown Argus			3								3
Common Blue			1				24		2		27
Chalkhill Blue											0
Holly Blue	1		1				1				3
Duke of Burgundy											0
White Admiral											0
Red Admiral	4		1	2		1	3	8	20		39
Painted Lady											0
Small Tortoiseshell			4						2		6
Peacock			10	3	3	2	1	5	30		54
Comma	1			4	2	2	3	4	6		22
Dark Green Fritillary											0
Silver-washed Fritillary	1			4	2		2	3	5		17
Speckled Wood	36	8	2	9	26	27	6	145	34	6	299
Wall											0
Marbled White		1	4				36		1		42
Gatekeeper	2		15		2		15	7	13		54
Meadow Brown	9		26	13	7	6	51	25	24		161
Small Heath							4				4
Ringlet	5	3	22	8	9	15	56	23	85	1	227
<b>Total</b>	<b>81</b>	<b>13</b>	<b>121</b>	<b>74</b>	<b>109</b>	<b>83</b>	<b>266</b>	<b>297</b>	<b>318</b>	<b>10</b>	<b>1372</b>

**Table 3. Lineover Wood - Total butterfly species count for each year**  
**Years 1991- 2000**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<i>Number of species</i>	22	22	25	29	25	24	29	23	25	24
Small Skipper	20	12	13	13	55	21	33	4	20	3
Essex Skipper	0	0	0	0	0	0	0	0	0	0
Small/Essex Skipper	0	0	0	0	0	0	0	0	0	0
Large Skipper	2	21	53	109	118	43	31	23	109	20
Dingy Skipper	3	1	1	1	2	0	0	0	0	0
Grizzled Skipper	0	0	1	0	0	0	2	0	0	0
Clouded Yellow	0	0	0	1	0	0	0	0	0	0
Brimstone	19	72	18	27	39	110	56	55	31	40
Large White	30	108	19	30	63	25	41	73	46	30
Small White	19	30	21	59	82	27	10	16	20	34
Green-veined White	63	106	67	173	126	122	214	262	138	104
Orange-tip	8	22	29	37	28	38	26	39	21	23
Green Hairstreak	0	0	2	1	0	0	1	0	1	0
Purple Hairstreak	0	0	0	3	15	1	0	6	7	4
White-letter Hairstreak	0	0	0	1	0	3	1	0	0	1
Small Copper	1	0	3	11	10	17	4	3	3	2
Small Blue	0	0	0	0	0	0	0	0	0	0
Brown Argus	0	0	1	0	4	0	1	0	0	0
Common Blue	27	12	7	3	35	68	21	4	3	0
Holly Blue	20	7	1	0	0	17	18	18	2	2
Duke of Burgundy	0	0	0	1	0	0	2	0	0	0
White Admiral	0	0	0	1	0	0	0	0	0	0
Red Admiral	9	14	8	16	30	129	8	23	21	8
Painted Lady	0	4	0	5	2	318	1	1	1	4
Small Tortoiseshell	20	46	17	15	60	60	38	14	7	15
Peacock	74	168	65	131	158	368	160	103	118	67
Comma	31	18	4	5	27	21	69	14	17	7
Dark Green Fritillary	0	0	0	0	0	0	1	0	1	0
Silver-washed Fritillary	25	44	28	75	61	91	92	17	20	6
Marsh Fritillary	0	0	0	0	0	0	0	0	0	0
Speckled Wood	121	167	117	128	147	80	141	203	241	158
Wall	0	0	0	1	0	0	1	0	0	1
Marbled White	54	102	51	69	97	139	174	117	121	85
Grayling	0	0	0	0	0	0	0	0	0	0
Gatekeeper	15	28	23	72	72	162	137	53	137	93
Meadow Brown	153	437	228	433	812	542	405	297	443	238
Small Heath	8	11	5	18	31	17	20	9	6	2
Ringlet	82	168	157	196	254	168	178	201	178	121
<b>Totals</b>	<b>804</b>	<b>1598</b>	<b>939</b>	<b>1635</b>	<b>2328</b>	<b>2587</b>	<b>1886</b>	<b>1555</b>	<b>1712</b>	<b>1068</b>

**Table 3. (Continued) Lineover Wood - Total butterfly species count for 2000 - 2011**  
**Years 2001 - 2011**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Avg
<i>Number of species</i>	23	22	24	26	24	27	24	21	20	27	25	24
												0
Small Skipper	9	36	26	28	97	36	9	8	5	16	21	23
Essex Skipper	0	0	0	5	5	4	0	0	0	1	0	1
Small/Essex Skipper	0	0	0	2	2	2	2	0	0	0	0	0
Large Skipper	33	20	25	35	32	43	39	20	22	67	55	43
Dingy Skipper	0	0	0	2	0	0	0	0	0	2	2	1
Grizzled Skipper	0	0	0	0	0	0	0	0	0	0	0	0
Clouded Yellow	0	0	0	0	0	0	0	0	0	0	0	0
Brimstone	5	21	33	27	26	42	32	31	17	27	27	36
Large White	7	57	36	22	139	34	22	42	111	44	50	49
Small White	7	23	82	41	154	31	48	44	74	40	24	43
Green-veined White	31	123	121	128	141	100	97	94	340	171	181	136
Orange-tip	0	19	65	19	19	10	16	15	13	38	48	24
Green Hairstreak	0	0	0	0	0	0	0	0	0	0	2	0
Purple Hairstreak	4	19	3	5	26	2	7	4	5	0	0	6
White-letter Hairstreak	0	0	0	2	1	2	1	0	0	0	1	1
Small Copper	4	1	16	4	0	1	1	0	0	8	3	4
Small Blue	0	0	1	0	0	2	0	0	0	1	0	0
Brown Argus	0	0	0	0	0	0	0	0	0	1	3	0
Common Blue	5	2	46	32	15	36	3	3	11	79	27	21
Holly Blue	4	3	1	5	2	4	1	7	0	3	3	6
Duke of Burgundy	0	0	0	0	0	0	0	0	0	1	0	0
White Admiral	0	0	0	0	1	2	1	0	0	0	0	0
Red Admiral	8	8	17	5	18	26	19	10	5	8	39	20
Painted Lady	1	2	6	1	0	6	0	0	56	0	0	20
Small Tortoiseshell	12	15	42	26	4	8	1	1	6	6	6	21
Peacock	24	69	63	62	96	107	121	59	89	97	54	110
Comma	1	9	22	14	23	57	17	7	31	34	22	21
Dark Green Fritillary	2	0	0	0	0	0	0	4	0	1	0	0
Silver-washed Fritillary	1	13	25	20	35	81	72	28	38	39	17	41
Marsh Fritillary	0	0	0	0	0	0	0	0	0	0	0	0
Speckled Wood	64	164	206	186	252	214	171	170	209	210	299	167
Wall	0	0	0	0	0	0	0	0	0	0	0	0
Marbled White	108	103	68	112	157	178	83	102	40	50	42	101
Grayling	0	0	0	0	0	0	0	0	0	0	0	0
Gatekeeper	78	134	125	148	149	194	184	133	99	36	54	104
Meadow Brown	275	277	393	595	594	571	257	369	419	270	161	400
Small Heath	1	0	4	15	12	2	0	0	0	3	4	8
Ringlet	172	191	247	235	191	271	267	304	376	390	227	217
												0
<b>Totals</b>	856	1309	1673	1776	2191	2066	1471	1455	1966	1643	1372	1626

**Table 4. Extra butterflies recorded in Lineover Wood in 2011**

For location see map of Lineover Wood on page 17

<b>Date</b>	<b>Wk</b>	<b>Butterflies Seen</b>	<b>Location</b>	<b>Recorder</b>
6 Apr	1	2 Peacock 4 Brimstone	Nigel Jones top field 988185 (A on map)	PA
8 Apr	2	1 Brimstone 6 Peacock	On path to Mary's seat 988186 (B on map)	JA
		1 Brimstone 1 Peacock	Nigel Jones top field 988185 (A on map)	JA
1 May	5	1 Green Hairstreak	Piccadilly Circus 986186 (C on map)	JH
		1 Dingy Skipper	Quarry in Section 3 983186 (D on map)	
21 May	8	1 Common Blue	By Mary's Seat 988186 (B on map)	TA
		3 Common Blue	On path in Section 9 988187 (E on map)	TA
24 May	8	1 Dingy Skipper	In Section 3 983186 (D on map)	TA/PA
24 June	13	8 Meadow Brown 5 Ringlet 3 Speckled Wood 1 Marbled White	On Cotswold Way Lower part of wood 986194 (F on map)	JH
		6 Ringlet 4 Speckled Wood	On Cotswold Way Lower part of wood 988191 (G on map)	
		12 Ringlet 11 Meadow Brown 15 Marbled White	Meadow 989189 (H on map)	
4 July	14	10 Purple Hairstreak	986192 (J on map)	JC
		5 Purple Hairstreak	By railway line (A40) 986195 (K on map)	
		10 Purple Hairstreak	985191 (L on map)	

**Table 4 (Continued). Extra butterflies recorded in Lineover Wood in 2011**

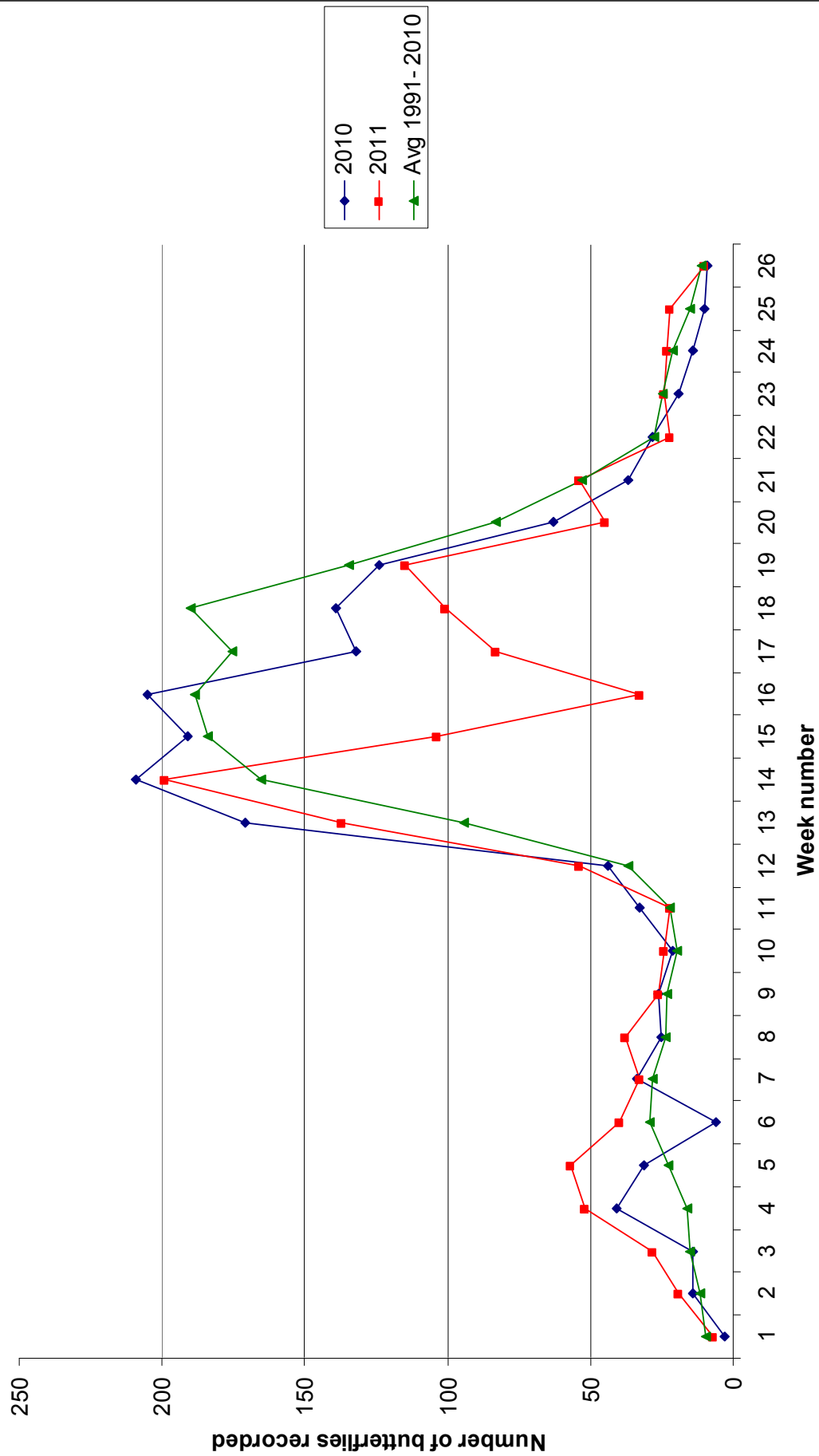
For location see map of Lineover Wood on page 17

<b>Date</b>	<b>Wk</b>	<b>Butterflies Seen</b>	<b>Location</b>	<b>Recorder</b>
10 July	15	1 White-letter Hairstreak	On Wych Elm Section 1 985184 (M on map)	TA
11 July	15	3 White-letter Hairstreak	On Wych Elm Section 1 985184 (M on map)	JC
11 July	15	4 Purple Hairstreak	On Oaks 985191 (L on map)	JH
25 July	17	4 Peacock	Mary's Seat 988186 (B on map)	PA
26 July	17	2 Purple Hairstreak  2 Purple Hairstreak	By railway line (A40) 986195 (K on map)  987192 (N on map)	JC
31 July	18	1 White-letter Hairstreak  2 Purple Hairstreak	On Wych Elm Section 1 985184 (M on map)  By triangle 989188 (P on map)	JC
1 Aug	18	23 Peacock 9 Red Admiral	Along path by Mary's seat 988186 (B on map)	TA/BA/PA
5 Aug	19	1 Peacock 1 Red Admiral	By top bend to Mary's seat 988186 (B on map)	JH
21 Aug	21	18 Red Admiral  6 Common Blue	Along path by Mary's seat 988186 (B on map)  Nigel Jones top field 988185 (A on map)	TA/BA/PA
2 Sept	23	19 Red Admiral 2 Peacock	Along path by Mary's seat 988186 (B on map)	JH
10 Sept	24	4 Red Admiral	Along path by Mary's seat 988186 (B on map)	TA/BA

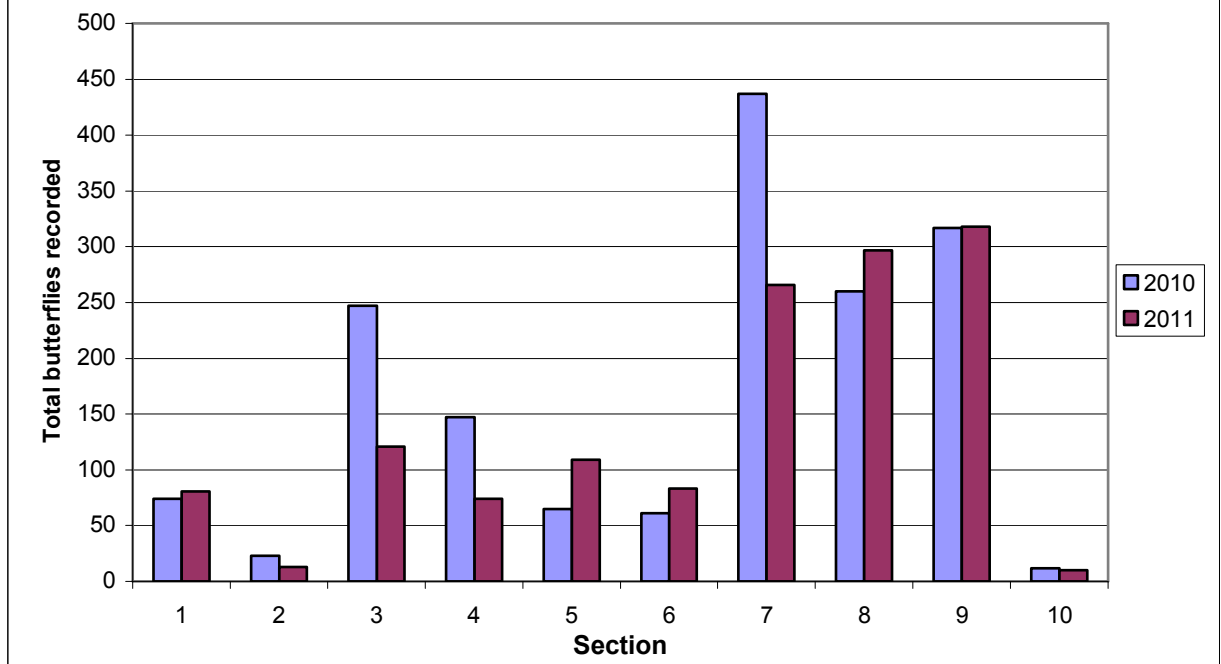
**Table 5. First and Last Butterflies 2011**

<b>Date</b>	<b>Butterflies</b>	<b>Location</b>	<b>Recorder</b>
23 Mar	<b><u>First Butterflies</u></b>		
	3 Peacock 1 Comma 1 Brimstone	Section 4 Section 9	TA/PA
23 Mar	2 Brimstone 1 Comma	Sections 4 & 5	JC
29 June	<b><u>First sighting of Silver-washed Fritillary</u></b>		
	1 male 1 female	Section 8 Section 9	JC
14 Oct	<b><u>Last butterflies</u></b>		
	2 Speckled Wood 2 Comma	Piccadilly	TA/PA/BA
	1 Speckled Wood 1 Red Admiral	Section 8 In Nigel Jones field	
14 Oct	1 Red Admiral	By entrance	JH
29 Oct	1 Red Admiral	By stone wall in Nigel Jones' field	PA/SJ
13 Nov	1 Peacock	Emerging from stone wall in Nigel Jones' field	PA/TA/JA

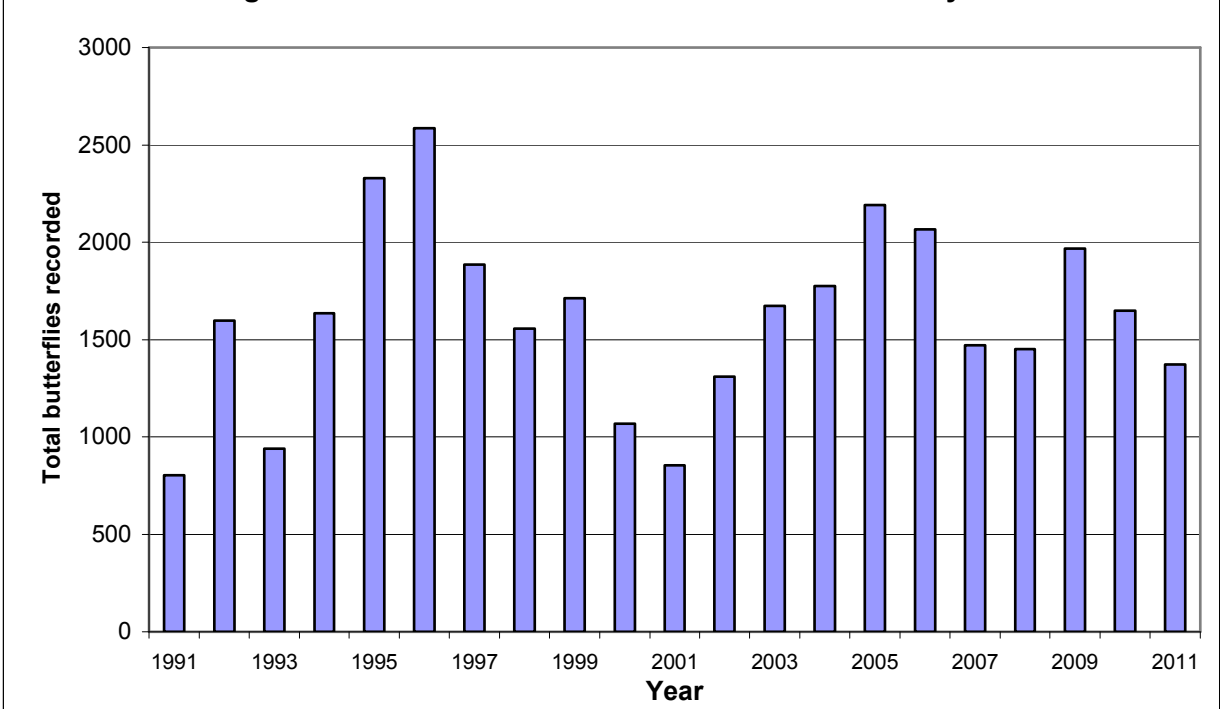
**Figure 1. Lineover Wood - Number of butterflies recorded each week in 2010 and 2011 and average for 1991 - 2010**



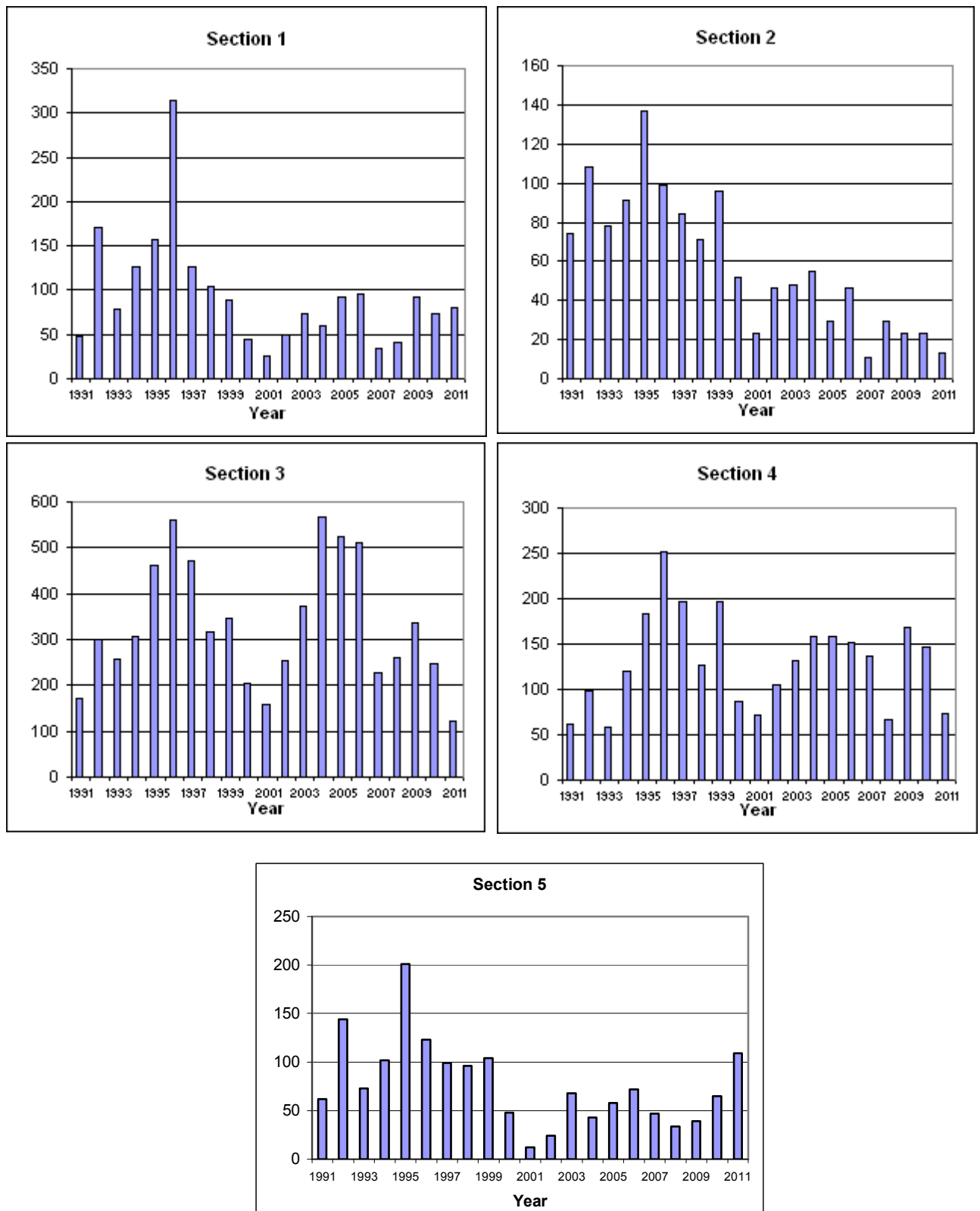
**Figure 2. Number of butterflies recorded in each section in 2010 and 2011**



**Figure 3. Total number of butterflies recorded each year**

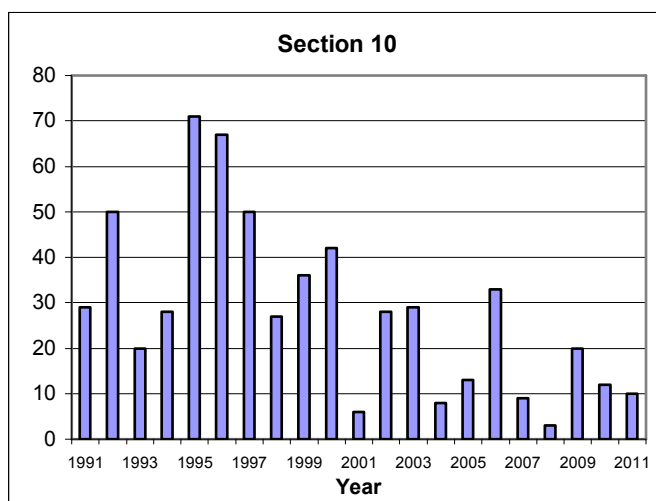
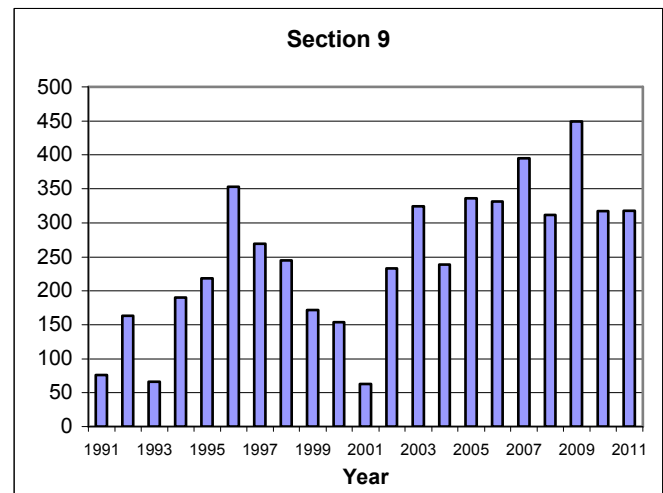
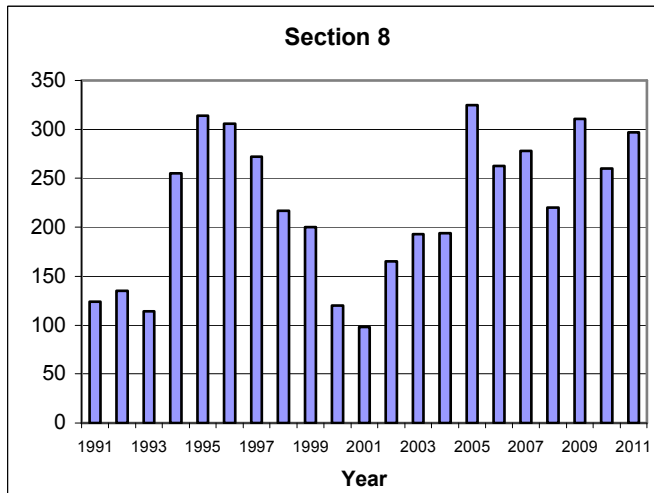
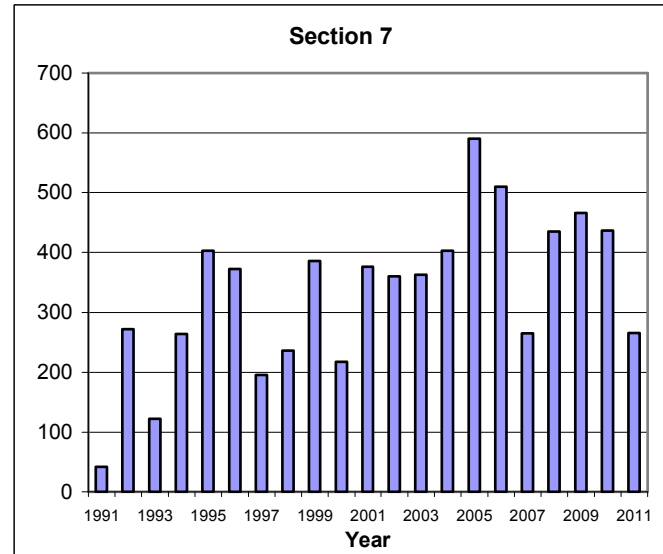
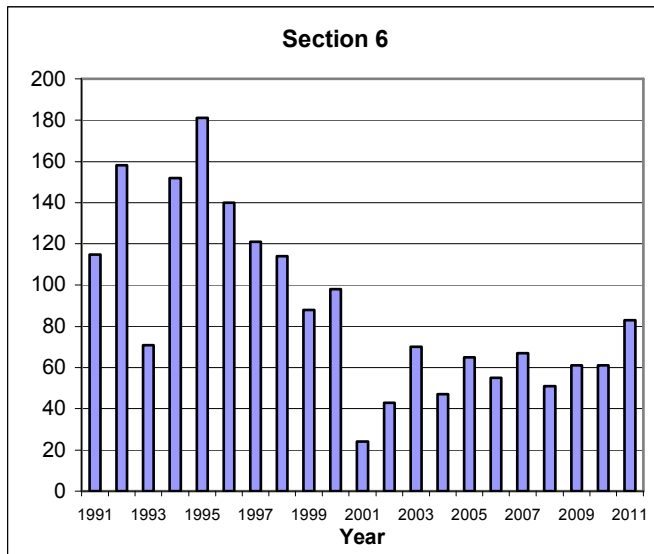


**Figure 4. Number of butterflies in each section 1991 - 2011**  
**Sections 1 - 5**



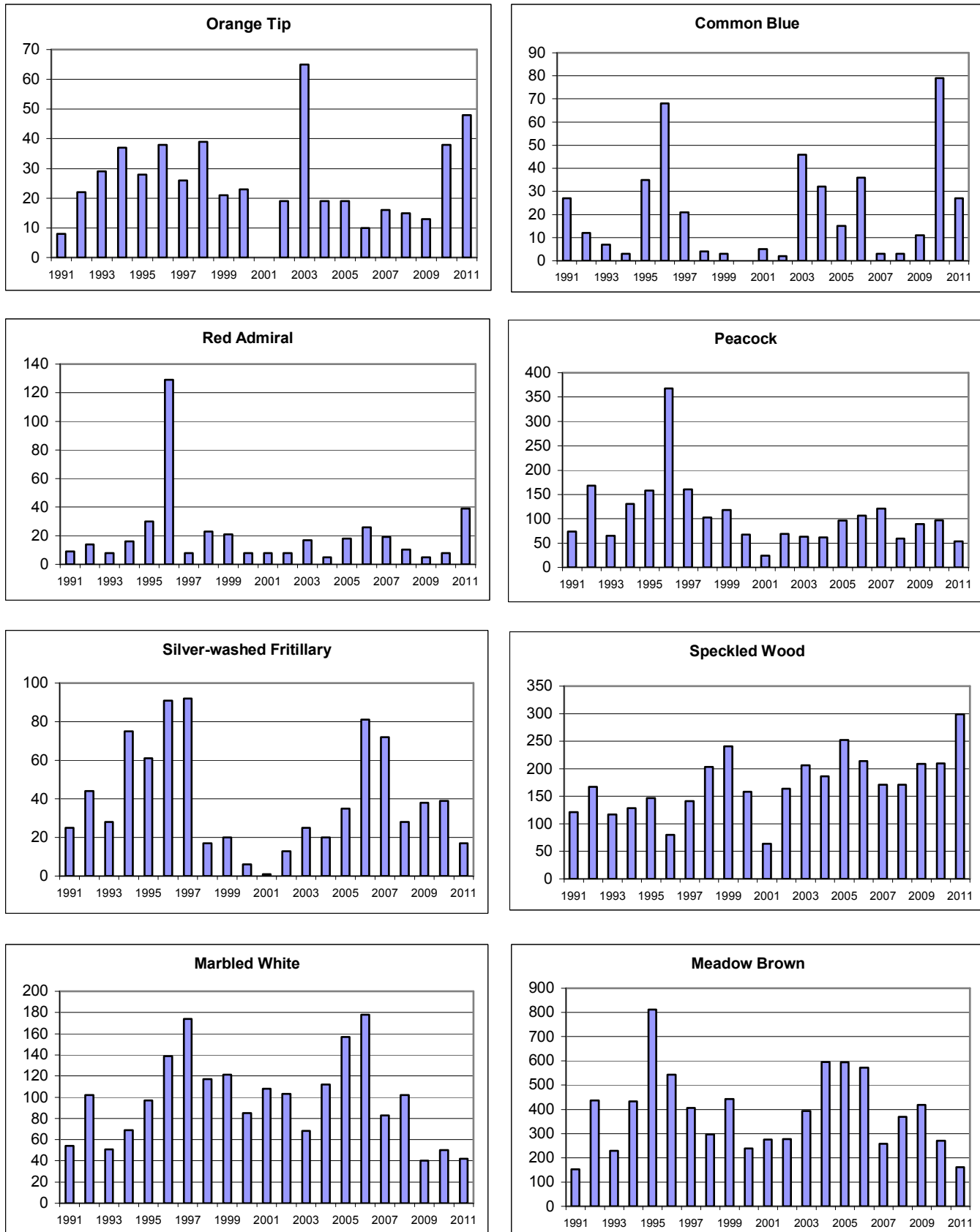
NB. Scales on charts are not the same!

**Figure 4 (Continued). Number of butterflies in each section 1991 - 2011**  
**Sections 6 - 10**



NB. Scales on charts are not the same!

**Figure 5. Trends for several species**



NB. Scales for each chart are different

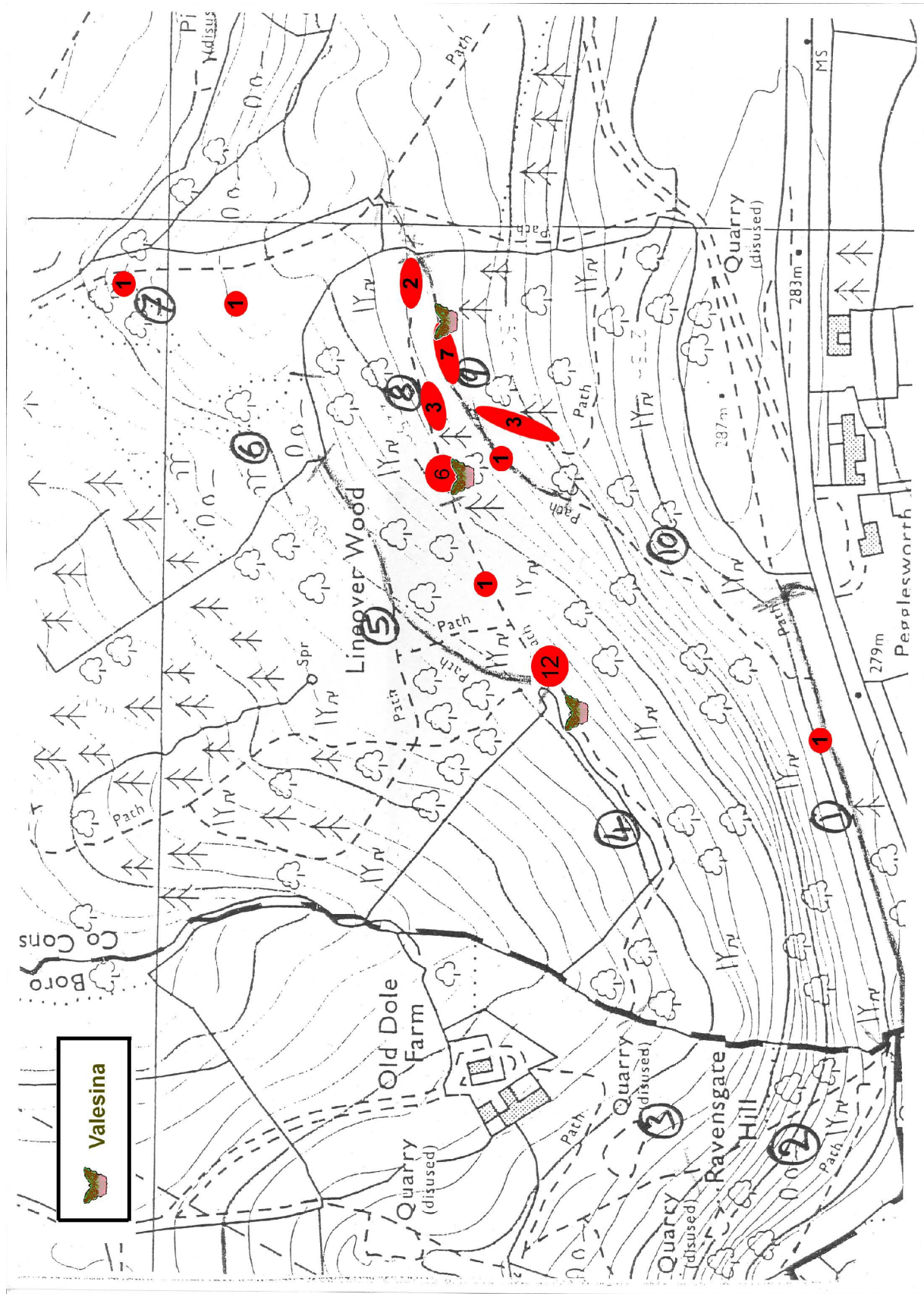
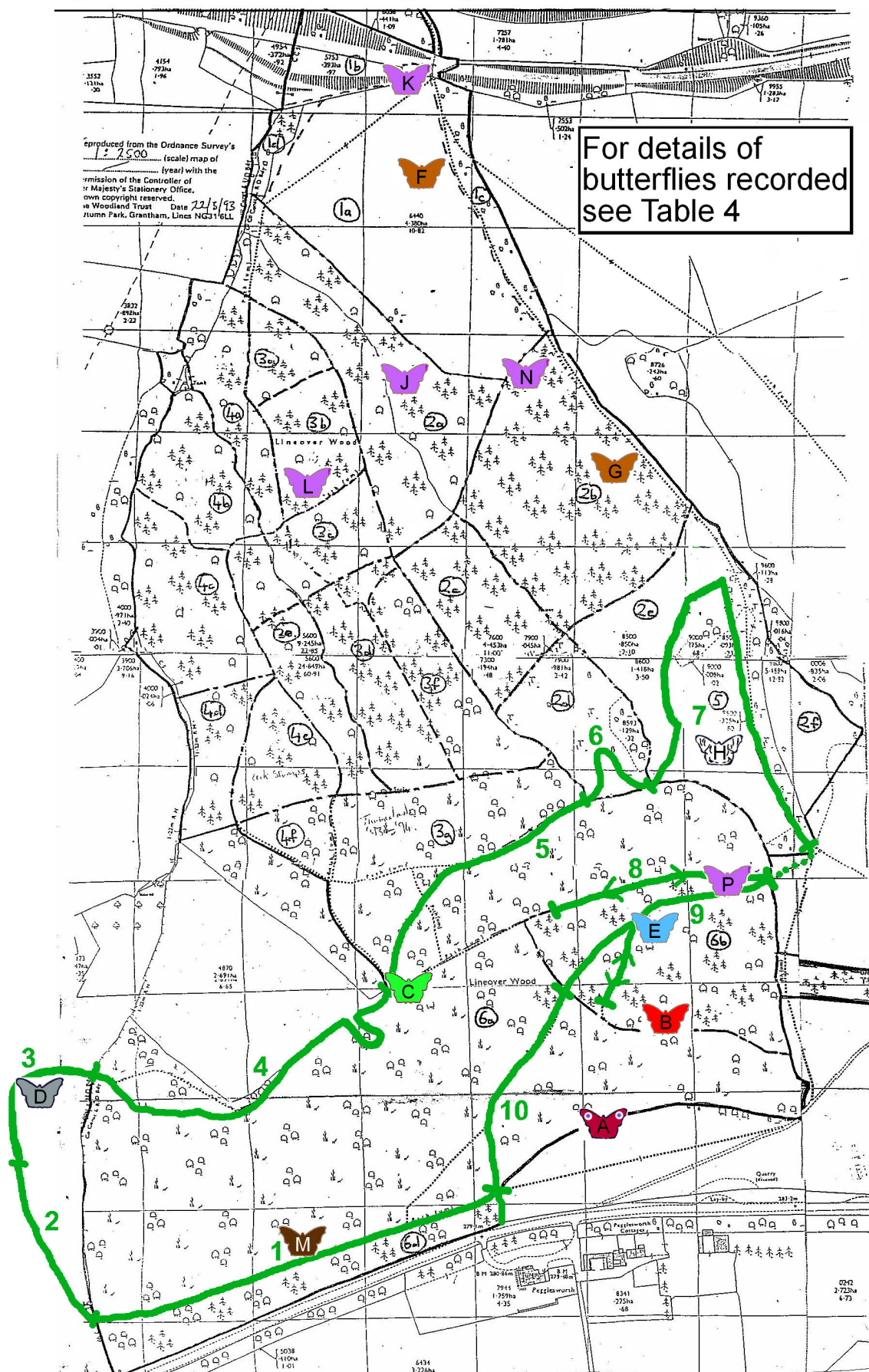


Figure 6. Map of sightings of Silver-washed Fritillary

Figure 7. Map of transect and sightings of extra butterflies recorded



**Figure 8. Weather records from 2000 to 2011**  
(Average of observations from Ross-on-Wye and Oxford)

