



# Lineover Wood Butterfly Report 2009



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## **Results of 2009 butterfly survey in Lineover Wood**

2009 has been quite a good year for butterflies in Lineover Wood despite the cool showery weather in July and August. Total number of butterflies have increased from 1455 in 2008 to 1966 this year (an increase of 35%). However, half of this increase results from an almost four-fold rise in Green-veined White. One of the highlights this year was seeing two Valesina Silver-washed Fritillaries in Section 9.

### **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 - 4 and Figures 1 - 7. A walk was carried out in every week except week 7, when the weather was not acceptable all week. In Table 1, estimated counts for this week are shown in red. These estimated values appear to be too high, but Head Office at Butterfly Conservation explains that the software calculates estimates for missing values by considering counts for several weeks earlier and taking account of how quickly these counts are increasing. Anyway, these estimated values only affect the index value which we do not use.

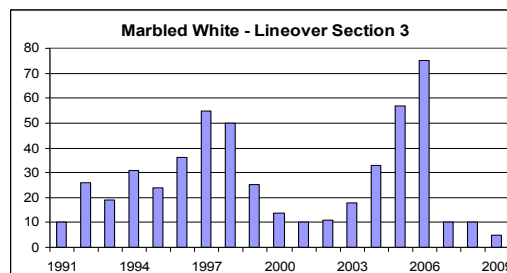
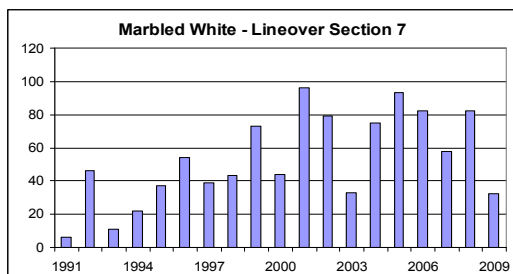
Numbers of butterflies have increased in all sections (see Fig 4), except for Section 2, which does not belong to the Woodland Trust and hence over which we do not have any control. The most notable section is section 9, where the highest number of butterflies since 1991 was recorded. In fact the total number was only a little less than that recorded in the meadow, Section 7. This reflects all the management work carried out in the last few years.

The trends for most of the species recorded are given in Figure 5 (Pages 14 and 15). Large and Small Skippers have not done well in the last two years, whereas Large White and Green-veined White have risen dramatically. In fact Green-veined White produced its highest ever count with a total of 340. Common Blue and Small Tortoiseshell have made small recoveries after the past poor two years, but are still down in numbers. We saw many Painted Ladies in the wood following the mass influx from the continent in late May, but there were not as many as in the last big Painted Lady migration in 1996. There seems to be no stopping the Ringlet, whose numbers have risen significantly again this year to give its highest ever count. However it is still behind the Meadow Brown which still ranks as the most numerous butterfly on the transect.

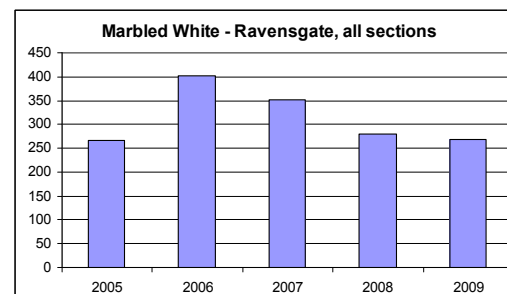
Details of butterflies recorded in the wood extra to those recorded on official transect walks are given in Table 4 and their positions shown on a map in Figure 7. It is useful to see where Purple Hairstreak and White-letter Hairstreak are recorded as many of these sightings are off the transect or recorded in the late afternoon or evening.

### **Marbled White**

We were concerned about the significant fall in numbers of Marbled White. Why had numbers dropped so much? Was it a bad year generally or just on the transect? We compared charts for Marbled White in Section 3 and Section 7 with that for Ravensgate.



From this, we could see that Marbled White on Ravensgate was not significantly different from in previous years. Also, Marbled White has fared reasonably well on most other sites in Gloucestershire. In Section 7, this decrease could reflect the management in the last few years. Because of the lack of grazing, the meadow has been cut in the autumn. While this is good for the flora and those butterflies which prefer a shorter turf, it is not good for butterflies such as the Marbled



White which require some longer grass for egg-laying and for the larval stage. The newly emerged larvae hibernate in dead vegetation and grass tussocks from August onwards. Cutting the grass in autumn or winter could remove many larvae. Ideally, a mosaic of different lengths which usually results from cattle grazing provides the preferred habitat for a range of butterflies. As grazing is not possible at the present time, it was decided, as an experiment, to just cut half of the meadow this autumn. We will then wait to see how this affects Marbled White numbers in 2010.

### **Silver-washed Fritillary**

The number of Silver-washed Fritillary on the transect has increased this year after a poor year in 2008. It is now close to the average count since the transect began. 24 out of the 38 recorded on the transect were in Section 9. The map of sightings in Figure 6 confirm that this is the main area of activity. (Actual number of sightings recorded are given in the red shaded areas.) Section 8 is also a good area for these butterflies and two females were seen on separate occasions laying eggs on the trunks of Ash trees on the south-facing edge of the footpath. It was encouraging that four Silver-washed Fritillary were recorded in Piccadilly after an absence last year.

The highlight of the year was seeing the Valesina form. This is an aberration and only occurs in females. These butterflies are a lovely olive brownish-green with an underside washed with pink. They tend to occur in woods in southern England around Hampshire where about 15% of the females are of the Valesina form. They are quite unusual in Gloucestershire. It is thought that this aberration is caused by high temperatures at certain stages of their development. (There were hot spells at the end of May and end of June.) One was spotted near to a bramble island in Section 9 and about a week later, two were spotted again on the same bramble island (see photo).



### **Weather**

The summer of 2009 was pretty average compared with summers in the last ten years. Figure 8 shows the weather records from 2000 until 2009. The values were obtained by taking an average of Ross-on-Wye and Oxford weather records. (Historical weather records are not available for Cheltenham.) 2009 is represented by the pink bars and the average represented by the yellow bars.

April and May were warmer, sunnier and drier than average. June tended to be wetter, but a bit warmer and July was cooler, wetter and duller. August and September were cool, but reasonably dry. It was disappointing that the poor weather occurred during July and August, the two peak butterfly months. The number of butterflies recorded on a transect is much higher on a warm, sunny day than on a duller, cooler day, even if on both days, the weather conditions are deemed acceptable for recording butterflies.

### **Comparison with other sites**

Official results from butterfly transects in 2009 are not yet available, but unofficial reports suggest that there has been a recovery in numbers of many species. Indeed, many of the species which fly in the spring have fared particularly well this year.

### **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. The results of the transect help us in making decisions on where to focus conservation efforts. Recently, 'bramble islands' have been created in the cleared areas. These have proved very successful in providing a valuable nectar source. (Bramble flowers are the favourite nectar source for Silver-washed Fritillary.) They also attract the butterflies to one spot for easier observation.

In the very mediocre weather of 2009, many species of butterfly on the transect have shown signs of recovery from the previous two summers. With continued effective management, we should be able to provide a good habitat for all our butterflies. Let's hope that we get a cracking summer in 2010 and see just how well the butterflies perform.

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	18	16	16	14	17		18	21	15	23	20	26	21	20	19	21	18	19	19	20	20	19	23	17	19		
Mean Sun	98	90	100	86	85	100		100	100	75	95	10	92	59	30	100	80	40	84	10	70	90	55	100	100	77		
Small Skipper													1	1	1	3											5	5
Essex Skipper																											0	0
Small/Essex Skipper																											0	0
Large Skipper											4	2	8	1	3	3	1										22	22
Dingy Skipper																											0	0
Grizzled Skipper																											0	0
Clouded Yellow																											0	0
Brimstone	6	5			4					1															1		17	17
Large White			2		1	9	15	7	11		4		3	4	6	2	9	23	15	10	4	1					111	126
Small White				1	2				2				1	1	14		6	44			3		1				74	74
Green-veined White		2	3	9	16	50	53	19	22	5	3		2	3	9	30	67	51	27	8	3	8	2		1		340	393
Orange-tip		1	1	2	7				2																		13	13
Green Hairstreak																											0	0
Purple Hairstreak																	3	2									5	5
Small Copper																											0	0
Small Blue																											0	0
Brown Argus																											0	0
Common Blue																			1	4	4	2					11	11
Chalkhill Blue																											0	0
Holly Blue																											0	0
White Admiral																											0	0
Red Admiral										1						1	1	1		1							5	5
Painted Lady								1	13	2	2	1	2	3	1	2	1	19	7	2							56	56
Small Tortoiseshell												2			1					1		1			1		6	6
Peacock	5	3	3	2	3	2	1										1	29	21	14	4				2		89	90
Comma				1				1					1	3	5	4	4		2	3	1	1			1	4	31	31
Dark Green Fritillary																											0	0
Silver-washed Fritillary													2	3	9	11	7	4	2								38	38
Speckled Wood				1	2	8	12	8	8	4	17	9	24	7	5	9	4	3	12	14	9	17	15	9	11	13	209	221
Wall																											0	0
Marbled White												4	8	6	8	10	3	1									40	40
Grayling																											0	0
Gatekeeper															3	8	22	35	16	11	1	3					99	99
Meadow Brown											1	21	46	45	57	59	81	55	24	13	11	6					419	419
Small Heath																											0	0
Ringlet											2	29	110	126	75	24	8	1	1								376	376
Total	5	12	14	16	35	69	81	36	58	12	34	68	206	203	183	177	215	230	172	81	40	39	18	12	14	17	1966	2047

Table 1. Lineover Wood - 2009 - Total butterflies recorded each week

**Table 2. Lineover Wood - 2009 - 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			1				3	1			5
Essex Skipper											0
Small/Essex Skipper											0
Large Skipper			2	1			10	3	6		22
Dingy Skipper											0
Grizzled Skipper											0
Clouded Yellow											0
Brimstone				7		1	4	4	1		17
Large White	4		17	11	3	1	27	22	25	1	111
Small White	1		12	4	4	2	25	12	13	1	74
Green-veined White	29	7	40	38	9	17	58	69	70	3	340
Orange-tip				4	4		1		4		13
Green Hairstreak											0
Purple Hairstreak	2							2	1		5
Small Copper											0
Small Blue											0
Brown Argus											0
Common Blue			6				5				11
Chalkhill Blue											0
Holly Blue											0
White Admiral											0
Red Admiral	2		1						2		5
Painted Lady			18	1			29	1	7		56
Small Tortoiseshell			4				1		1		6
Peacock	2		22	1	1	2	19	5	37		89
Comma			5	6	1		2	5	11	1	31
Dark Green Fritillary											0
Silver-washed Fritillary	1			3			1	9	24		38
Speckled Wood	38	2	4	6	7	22	13	78	25	14	209
Wall											0
Marbled White		1	5				32		2		40
Grayling											0
Gatekeeper	1		48	11			6	6	27		99
Meadow Brown	12	4	111	47	9	5	121	34	76		419
Small Heath											0
Ringlet		9	40	29	1	11	109	60	117		376
<b>Total</b>	<b>92</b>	<b>23</b>	<b>336</b>	<b>169</b>	<b>39</b>	<b>61</b>	<b>466</b>	<b>311</b>	<b>449</b>	<b>20</b>	<b>1966</b>

**Table 3. 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
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
Small Blue	0	0	0	0	0	0	0	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
Duke of Burgundy	0	0	0	1	0	0	2	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) Total butterfly species count for each year**  
**Years 2001 - 2009**

	2001	2002	2003	2004	2005	2006	2007	2008	<b>2009</b>	<i>Average</i>
<i>Number of species</i>	23	22	24	26	24	27	24	21	<b>20</b>	24
Small Skipper	9	36	26	28	97	36	9	8	<b>5</b>	25
Essex Skipper	0	0	0	5	5	4	0	0	<b>0</b>	1
Small/Essex Skipper	0	0	0	2	2	2	2	0	<b>0</b>	0
Large Skipper	33	20	25	35	32	43	39	20	<b>22</b>	43
Dingy Skipper	0	0	0	2	0	0	0	0	<b>0</b>	1
Grizzled Skipper	0	0	0	0	0	0	0	0	<b>0</b>	0
Clouded Yellow	0	0	0	0	0	0	0	0	<b>0</b>	0
Brimstone	5	21	33	27	26	42	32	31	<b>17</b>	38
Large White	7	57	36	22	139	34	22	42	<b>111</b>	46
Small White	7	23	82	41	154	31	48	44	<b>74</b>	42
Green-veined White	31	123	121	128	141	100	97	94	<b>340</b>	123
Orange-tip	0	19	65	19	19	10	16	15	<b>13</b>	24
Green Hairstreak	0	0	0	0	0	0	0	0	<b>0</b>	0
Purple Hairstreak	4	19	3	5	26	2	7	4	<b>5</b>	6
White-letter Hairstreak	0	0	0	2	1	2	1	0	<b>0</b>	1
Small Copper	4	1	16	4	0	1	1	0	<b>0</b>	5
Brown Argus	0	0	0	0	0	0	0	0	<b>0</b>	0
Common Blue	5	2	46	32	15	36	3	3	<b>11</b>	18
Holly Blue	4	3	1	5	2	4	1	7	<b>0</b>	6
Small Blue	0	0	1	0	0	2	0	0	<b>0</b>	0
White Admiral	0	0	0	0	1	2	1	0	<b>0</b>	0
Red Admiral	8	8	17	5	18	26	19	10	<b>5</b>	21
Painted Lady	1	2	6	1	0	6	0	0	<b>56</b>	20
Small Tortoiseshell	12	15	42	26	4	8	1	1	<b>6</b>	22
Peacock	24	69	63	62	96	107	121	59	<b>89</b>	112
Comma	1	9	22	14	23	57	17	7	<b>31</b>	20
Dark Green Fritillary	2	0	0	0	0	0	0	4	<b>0</b>	0
Silver-washed Fritillary	1	13	25	20	35	81	72	28	<b>38</b>	41
Marsh Fritillary	0	0	0	0	0	0	0	0	<b>0</b>	0
Duke of Burgundy	0	0	0	0	0	0	0	0	<b>0</b>	0
Speckled Wood	64	164	206	186	252	214	171	170	<b>209</b>	163
Wall	0	0	0	0	0	0	0	0	<b>0</b>	0
Marbled White	108	103	68	112	157	178	83	102	<b>40</b>	107
Grayling	0	0	0	0	0	0	0	0	<b>0</b>	0
Gatekeeper	78	134	125	148	149	194	184	133	<b>99</b>	108
Meadow Brown	275	277	393	595	594	571	257	369	<b>419</b>	407
Small Heath	1	0	4	15	12	2	0	0	<b>0</b>	9
Ringlet	172	191	247	235	191	271	267	304	<b>376</b>	199
<b>Totals</b>	856	1309	1673	1776	2191	2066	1471	1455	<b>1966</b>	1606



**Table 4. Extra butterflies recorded in Lineover Wood in 2009**

For location see map of Lineover Wood on page 17

Date	Week	Butterflies Seen	Location	Recorder
19 Apr	3	1 Orange Tip	Above Mary's seat 988186 (A on map)	TA
29 Apr	5	12 Orange Tip	In SE corner of wood (coppiced area) (B on map)	JH
1 July	14	10 Ringlet 10 Meadow Brown 9 Marbled White  1 Meadow Brown 1 Large White 3 Ringlet 2 Speckled Wood 4 Green-veined White 2 Silver-washed Fritillary	On Cotswold Way 987194 (C on map)  On Cotswold Way 988193 (D on map)	JH
10 July	15	7 Purple Hairstreak  5 Purple Hairstreak  2 Purple Hairstreak	985191 (E on map)  986192 (F on map)  986191 (G on map)	JC
18 July	16	1 Small Copper	Section 7 (989190) (H on map)	TA
22 July	17	2 Comma 2 Common Blue 1 Red Admiral 10 Meadow Brown 4 Ringlet 1 Painted Lady 2 Small Heath 2 Large White 8 Green-veined White 2 Small White  1 White-letter Hairstreak (possibly)  2 Ringlet 8 Green-veined White 2 Small White 2 Comma 1 Silver-washed Fritillary  1 Silver-washed Fritillary	On Cotswold Way 987194 (C on map)          Near D on map  D on map    987195 (J on map)	JH
2 Aug	18	2 White-letter Hairstreak	On Cotswold Way (D on map)	JC

		3 White-letter Hairstreak  2 Purple Hairstreak  6 Purple Hairstreak 3 Purple Hairstreak 5 Purple Hairstreak	On cross path (K on map)  Honeysuckle Gate (G on map)  F on map  E on map  Near gate to A40 986195 (L on map)	
3 Aug	18	2 Purple Hairstreak	Section 1 (M on map)	JC
11 Aug	19	1 Purple Hairstreak  2 Purple Hairstreak  2 White-letter Hairstreak	F on map  L on map  K on map	JC
19 Aug	21	2 Purple Hairstreak	Section 1 (M on map)	JC
8 Sep	23	5 Red Admiral 1 Comma	Along path by Mary's seat (A on map)	TA

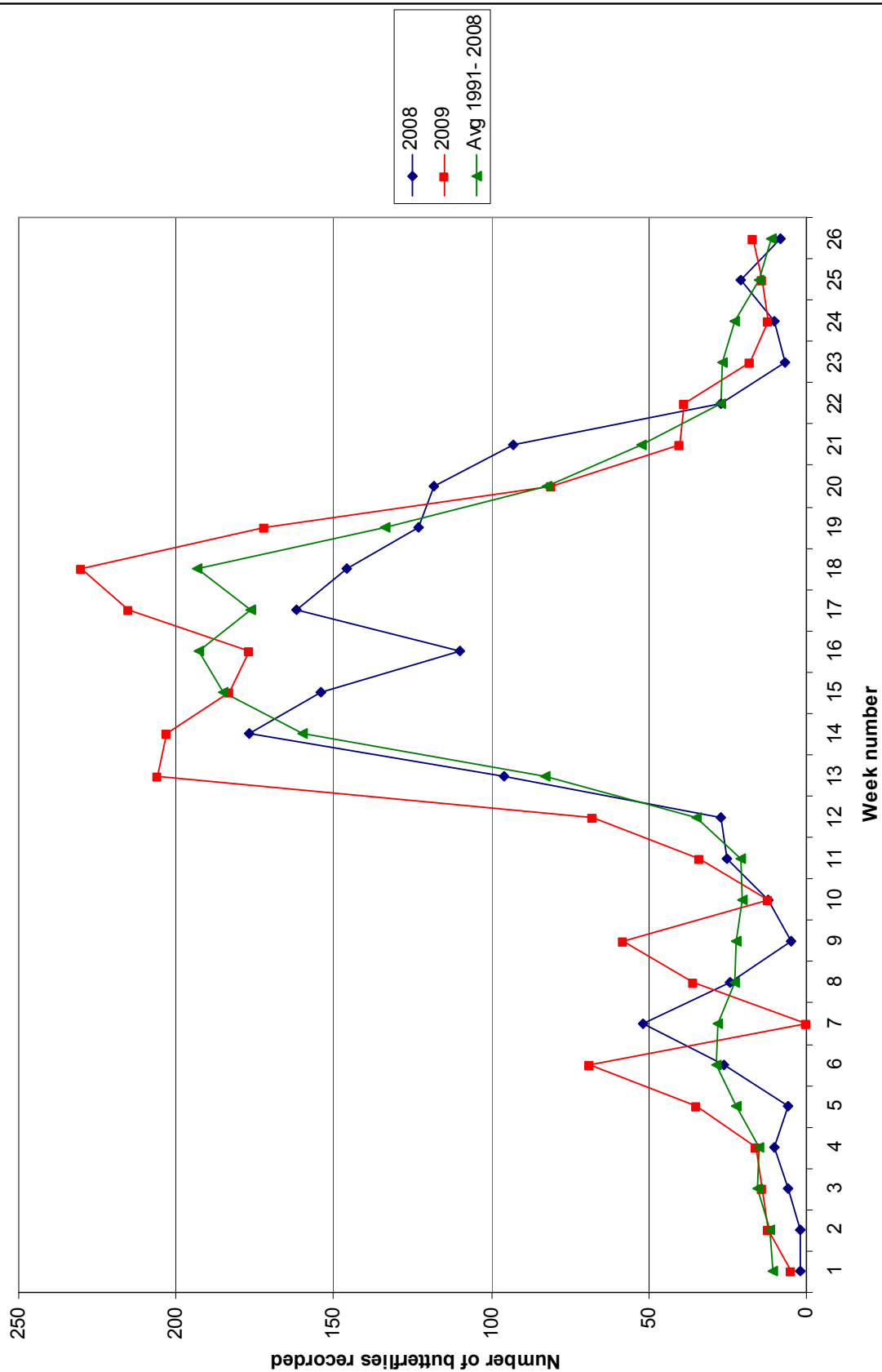
### **Day-flying moths recorded in 2009**

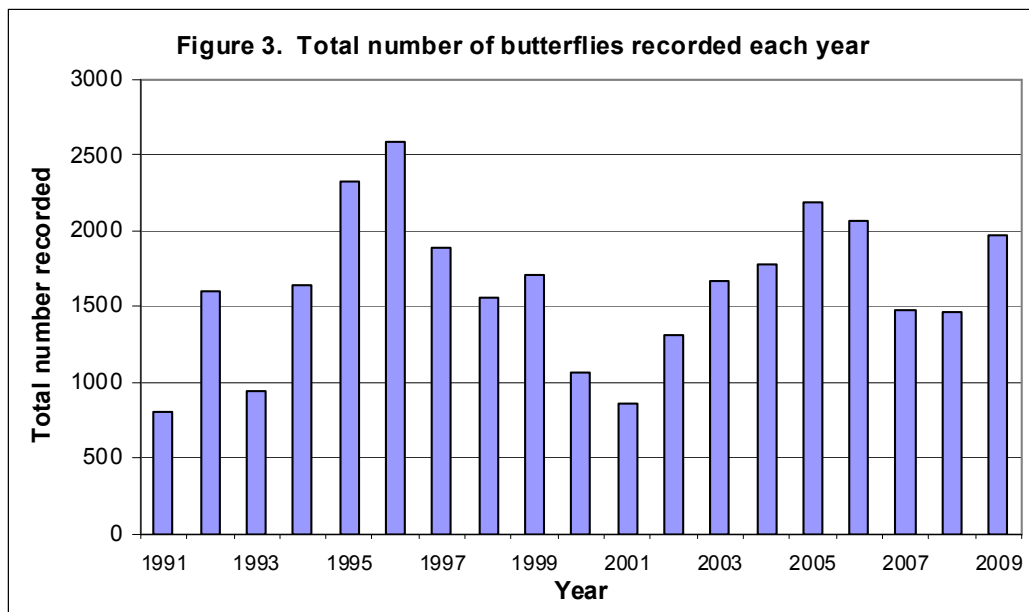
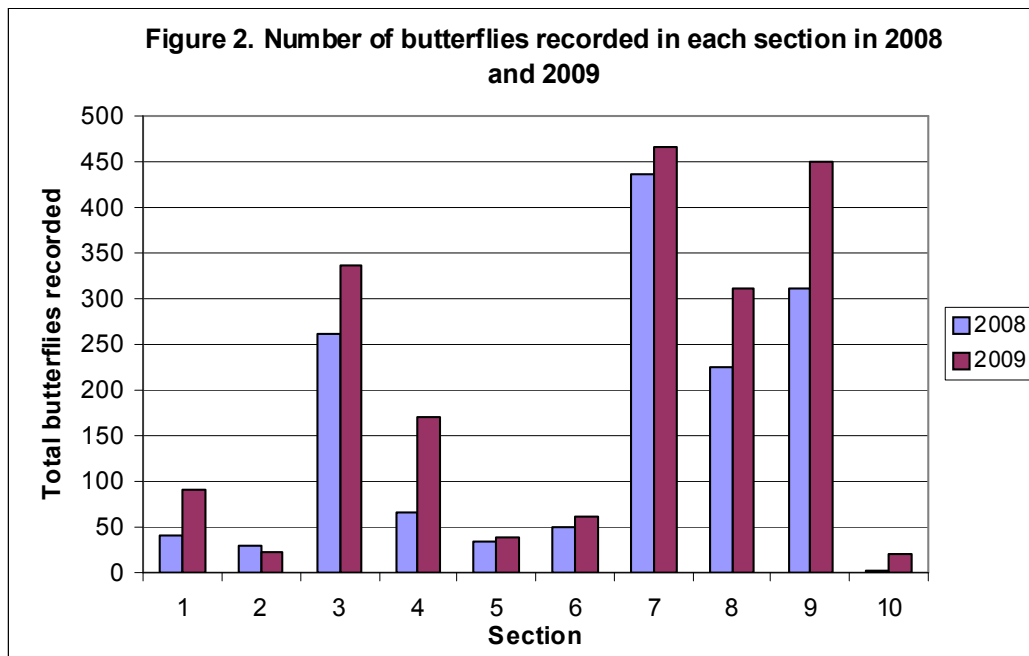
Date	Week	Moths Seen	Location	Recorder
24 May	8	Several Common Heath	Section 7	JC
5 Jun	10	12 Chimney Sweeper	Section 7	JH
22 Jun	12	5 Chimney Sweeper	Section 7	JC

### **First and last butterflies recorded in 2009**

Date	Week	Butterflies Seen	Location	Recorder
		No butterflies recorded before transects started in April		
1 Sept	22	1 Silver-washed Fritillary	Section 8	PA
14 Oct		1 Speckled Wood	Meadow	PA
30 Oct		1 Red Admiral	Cotswold Way (D on map)	PA

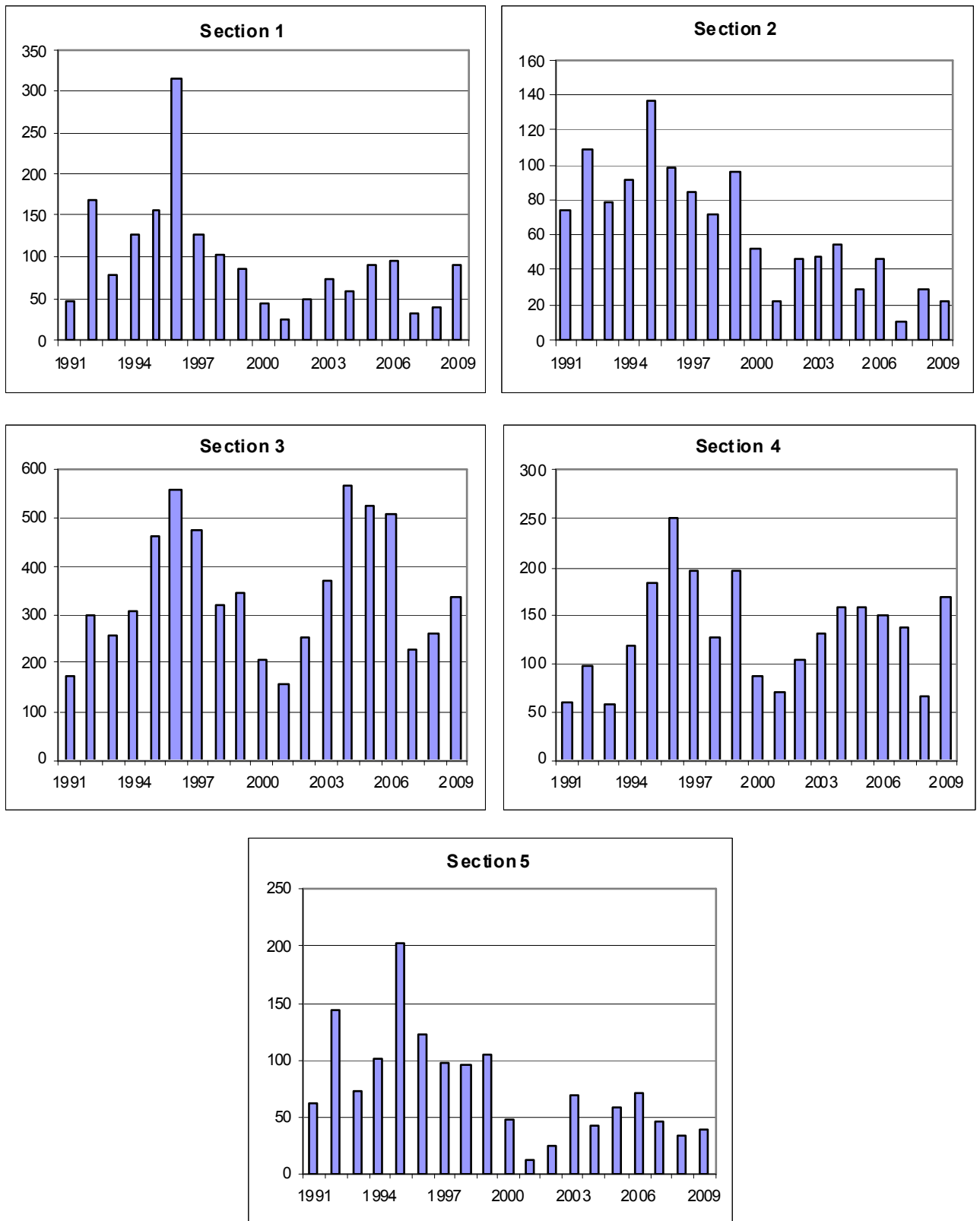
Figure 1. Lineover Wood - Number of butterflies recorded each week in 2008 and 2009 and average for 1991 - 2008





**Figure 4. Number of butterflies in each section 1991 - 2009**

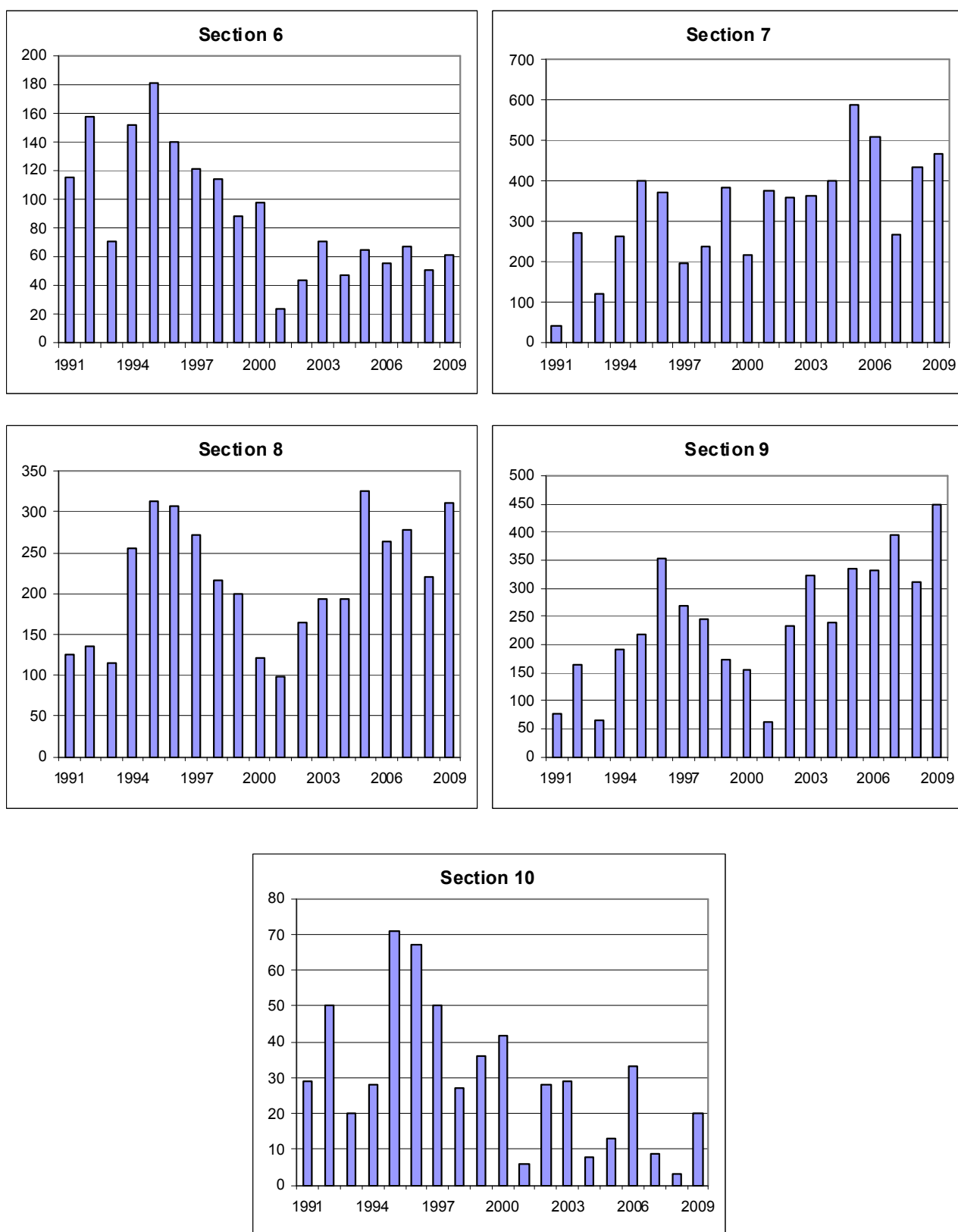
**Sections 1 - 5**



N.B. Scales for each chart are not the same!

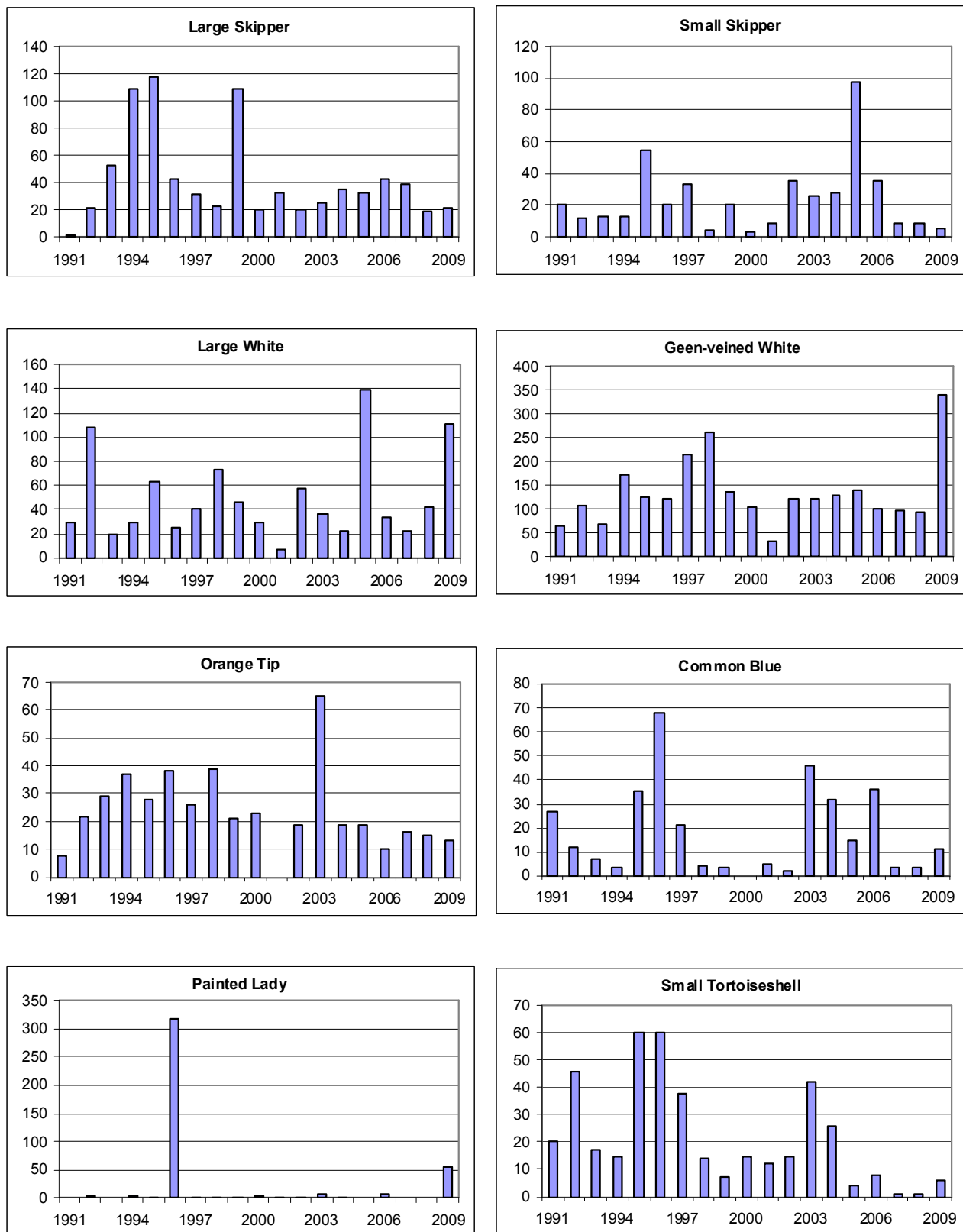
**Figure 4.(Continued) Number of butterflies in each section 1991 - 2009**

**Sections 6 - 10**



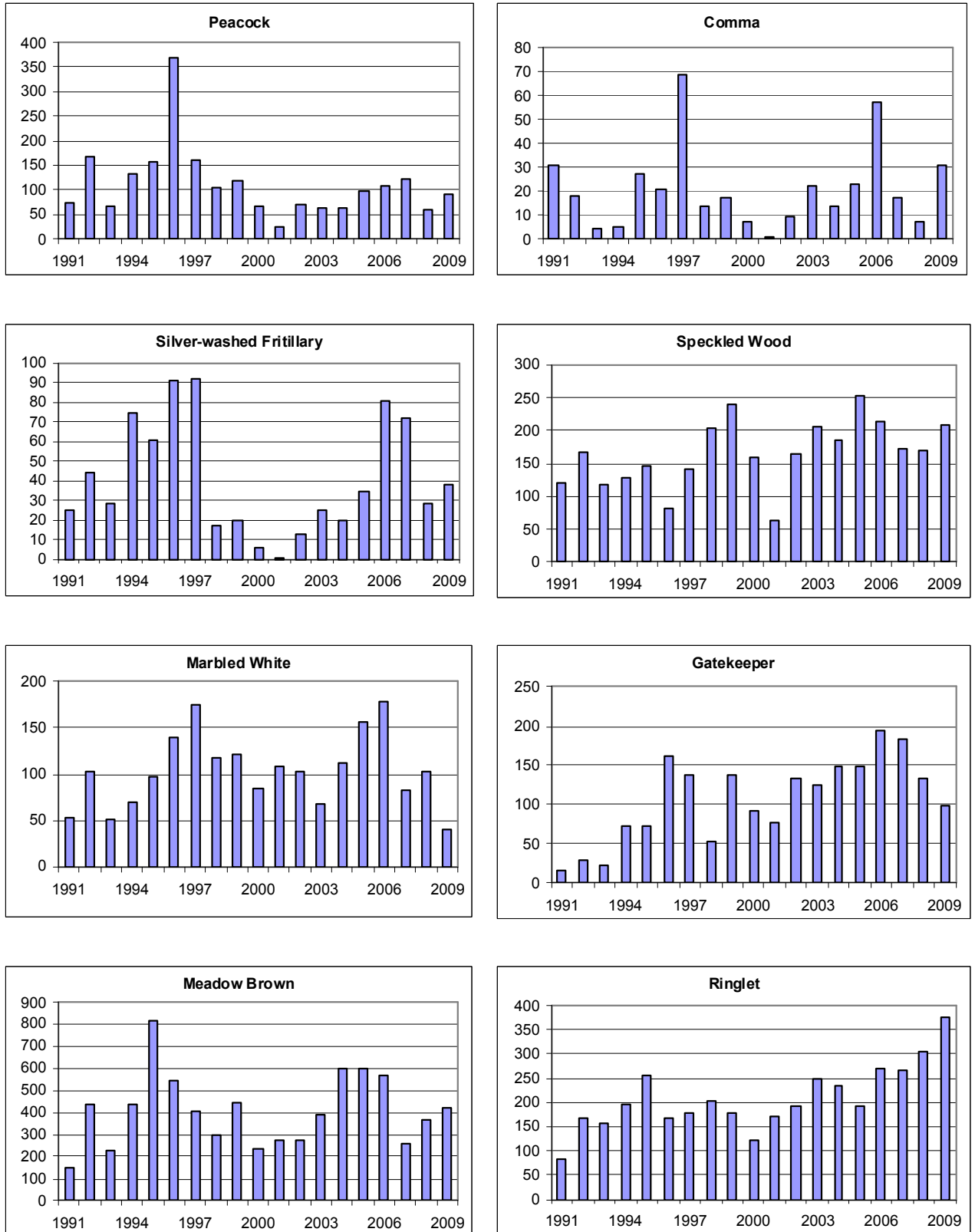
N.B. Scales for each chart are not the same!

**Figure 5. Trends for several species**



N.B. Scales for each chart are not the same!

**Figure 5 (Continued). Trends for several species**



N.B. Scales for each chart are not the same!



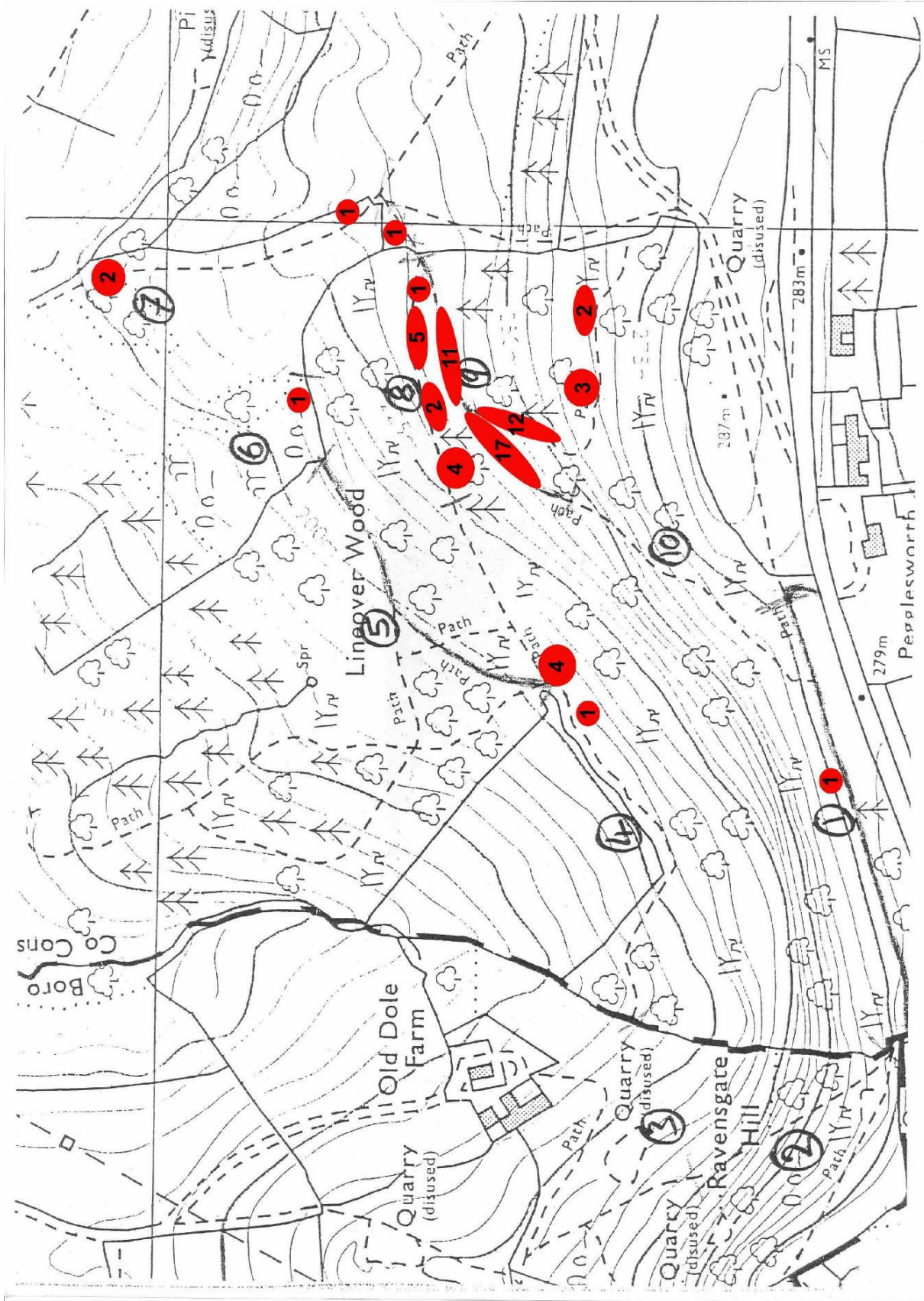
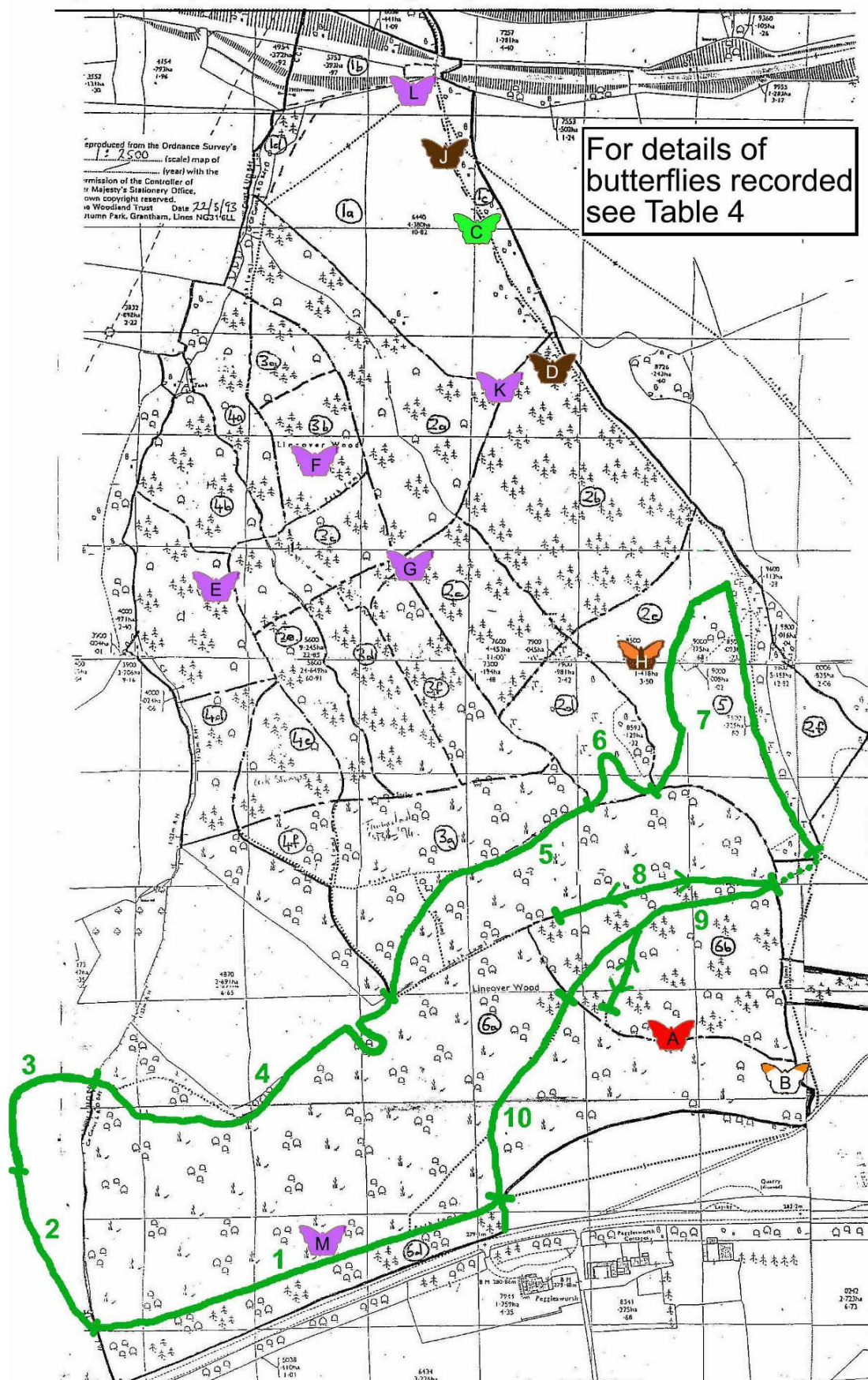


Figure 6. Map of sightings of Silver-washed Fritillary



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



**Figure 8. Weather records from 2000 to 2009**  
(Average of observations from Ross-on-Wye and Oxford)

