

# Ravensgate Hill

## Results of Butterfly Monitoring

### 2010



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**January 2011**

## Results of 2010 butterfly survey on Ravensgate Hill

The butterfly transect was carried out again in 2010 making it the sixth year of butterfly recording. In addition to recording on the transect, frequent visits were made to the rest of the hill to obtain casual records.

In 2010 the total number of butterflies recorded on the transect decreased from 1899 last year to 1424 this year (a decrease of 25%) However, the number of species increased from 23 to 28, proving that this year we had quality rather than quantity! If we also include species recorded off the transect, this brings the number of species up to 30, which is the highest ever number of species since the transect was started in 2005.

### Results

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

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The route of the transect is walked every week from the first week in April until the last week in September. Numbers of butterflies for each species recorded each week is given in Table 1. The peak numbers are recorded from the end of June until the end of July (weeks 13 to 18). In week 6, the weather was not warm enough for butterfly recording, so the 'Transect Walker' software estimated values for this week (shown in red).

Numbers of each species of butterfly recorded in each section are given in Table 2.

On the transect, section A runs along the top of the hill and is the best section with 627 butterflies being recorded there, Marbled Whites and Ringlets being the most numerous. There were also good numbers of Meadow Brown, Skippers and Small Heath (which has a high priority status in Butterfly Conservation's Biodiversity Action Plan). Section B is the Cotswold Way going down the slope and has similar butterflies to Section A. Section C runs along the foot of the hill going towards Dr. Watkinson's field. Here, there are fewer Marbled Whites, but this is a good place for Peacocks, Commas, Skippers, Green Hairstreak, Speckled Wood and the grassland species of Gatekeeper, Meadow Brown and Ringlet. Section D is a short section passing through the top of Dr. Watkinson's field to meet up with the footpath coming down the hill. It is mainly Ringlets and Meadow Browns which are recorded here.

Table 3 gives the total butterfly species count for each year since 2005 when the transect began. Most species have decreased in number this year except for Large Skipper, Common Blue, and Duke of Burgundy. Trends for many species are given in charts in Figure 3. This has been the year of the Common Blue with numbers recorded on the transect increasing from 9 to 63. This is in line with numbers recorded at other sites in Gloucestershire, where huge numbers were recorded in the second brood in August.



There has been a significant increase in Large Skipper numbers and as these butterflies do well in longer grass, this could be an indication of a higher proportion of longer grass on the hill. The three common white butterflies, the Large White, Small White and Green-veined White have all decreased from very high counts last year but were still recorded in high numbers. The Marbled White is a wonderful sight on the hill in July, but it had a poor year this year with the total number recorded being less than half of the average. The poor weather in the second half of July and August is probably a factor for the decrease in many species. Most of the commoner species, the Whites and the three common brown butterflies, the Meadow Brown, Ringlet and Gatekeeper fly in July and August, when the weather was poor. Decreases in the common species have a big effect on the total number of butterflies recorded and outweigh increases in less common species.

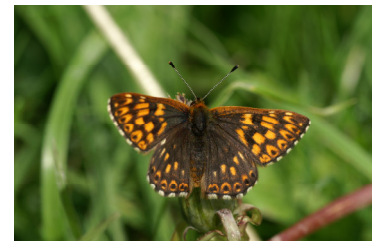
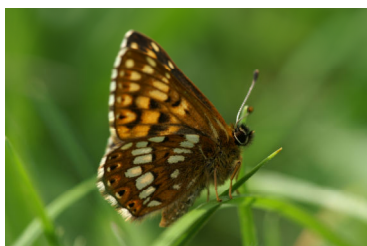
On a more positive note, the number of species recorded on the transect has risen from 23 last year to 28 this year, the extra species recorded this year being the Essex Skipper, Dingy Skipper, Small Copper, Brown Argus, Holly Blue and Silver-washed Fritillary. If we also include butterflies recorded not on official transect walks (see below), this pushes the species total up to 30 as we have casual records for Small Blue and the Wall butterfly.

We have been trying to survey the whole of the hill, not just along the transect. Table 4 shows which species were recorded on the hill in each year since 2005. There were quite a few species which have declined nationally but are present on the hill. Many of the species which have declined nationally are designated as 'Biodiversity Action Plan ('BAP') species and efforts are being made nationally to stop their decline. There are five high priority species on the hill:- Dingy Skipper, Small Blue, Duke of Burgundy, Wall and Small Heath and two medium priority species:- Green Hairstreak and Dark Green Fritillary. It is important that we provide the right habitat to encourage these species.

Details of butterflies recorded not on official transect walks in 2010 are given in Tables 5 and 6. In Table 5, records are given for each visit throughout the season. In Table 6, records are given for each section or area of the hill. Figure 4 gives a map showing these sections and areas on the hill. Most of the extra monitoring was carried out along the west end of the top of the slope (sections E, F and G and area L) and along the foot of the slope (sections H, J and K). There have also been a few visits to other parts of the hill (areas M, N and P) to record butterflies there. These areas are shown shaded on the map. These records are not obtained using a strict systematic method as on a transect, and so cannot be used to see trends or compare numbers from one year to another. However, they are very useful to see which species are present on the rest of the hill and do give some idea of abundance. Table 5 could be misleading as it gives the impression that the Duke of Burgundy is a very common species on the hill. Closer inspection reveals that frequent visits were made during the flight period of this butterfly.

### **Duke of Burgundy**

The main high priority species present on the hill is the Duke of Burgundy. These butterflies are mainly recorded near the foot of the hill (Sections H, J and K on the map), although a few have been recorded further up the slope in area L and further east along the foot of the slope along the transect route in sections B and C. As most of these areas are not on the transect, we have to make use of records from casual visits to get an idea of how they are faring. 2009 was a good year for these butterflies with a peak count of 13 on 1<sup>st</sup> June. This year,



the peak count was double at 26 on 26<sup>th</sup> May. No doubt the good weather at the end of May and beginning of June was beneficial for these butterflies this year. In addition to those recorded on the hill, one was recorded on the northern side of the hedge at the bottom of the slope in Mrs Davis' field and another was recorded on Dr. Watkinson's field. This is very encouraging as it is a sign that this species may spread out to colonise nearby suitable habitats. As there are only 10 sites left

in Gloucestershire, where this once common butterfly still survives, it is important that we manage the hill in such a way as to conserve or even improve their habitat.

This butterfly has quite specific requirements. As well as sheltered, sunny spots for the adult butterflies to feed and mate, it requires Cowslips for the larvae to feed on. In addition, these Cowslips need to stay lush and green throughout the larval feeding stage (June – early August) and not become dry and wilted in the summer sun. This is achieved by providing shade from scrubby bushes and long grass. However, the grass needs to be short enough early on in the season for the Cowslips to be able to grow. As Cowslips are short lived, some bare ground or short, sparse grass is desirable to allow some seed to germinate. It is considered that light cattle grazing only in the winter along with some scrub control provides the best management regime.

### **Marsh Fritillary**

Another high priority BAP species which has been present on the hill is the Marsh Fritillary. These butterflies were first recorded on the site in 2006. They were still there in 2007, but not seen at all in 2008. Surprisingly, one was spotted in 2009. No Marsh Fritillary were seen this year, so it is more than likely that the colony has died out. Marsh Fritillary require a warm site and do not generally thrive on north-facing slopes unless there is a hot summer (as in 2006).

### **Moths recorded**

Unfortunately this year, no moth trapping was carried out on the hill. However there were several day-flying species of moth recorded whilst recording the butterflies and these are listed in Table 7.

### **Weather**

Overall, the summer of 2010 was pretty average compared with summers in the last ten years. Figure 10 shows the weather records from 2000 until 2010. The values were obtained by taking an average of Ross-on-Wye and Oxford weather records. (Historical weather records are not available for Cheltenham.) 2010 is represented by the yellow bars and the average represented by the turquoise bars.

April was warmer, drier and sunnier than average. May was quite variable with cooler weather at the start of the month and warmer weather towards the end. Overall, it was drier and sunnier than average. The dry weather continued into June which was much warmer, drier and sunnier than average. In fact there was a prolonged hot dry spell at the end of the month. Normal British summer weather was resumed during July when the weather turned more changeable during the second half of the month. Overall July was warmer and drier than average, although not as sunny. August brought many cool, wet and dull days and was the coldest, wettest and dulliest August of the 10 years since 2000 and was by far the wettest month of the summer. The butterfly season finished with a cool September with lower than average levels of sunshine. However, there were still some glorious spells of weather in September which were made use of to carry out the transect in some of the weeks. As in 2009, it was disappointing that the poor weather occurred during August, one of the 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.

In conclusion, the warm and sunny spring resulted in earlier emergences and higher counts, whereas the cooler August led to lower counts and the earlier tailing off of butterfly numbers. Many of the high priority status butterflies, eg, Dingy Skipper, Small Blue and Duke of Burgundy fly in the spring and no doubt benefitted from the good weather which occurred then.

### **Comparison with other sites**

Official results from butterfly transects in 2010 are not yet available, but unofficial reports from other many Gloucestershire sites indicate that it has been a good year for many spring-flying species such as the Duke of Burgundy. Common Blue have been exceptionally

numerous in their second brood in August. As on Ravensgate, there have been lower counts of the common white butterflies particularly Large White. Gatekeeper and Meadow Brown have also had a poor year in Gloucestershire.

Large Skippers have done exceptionally well this year on Ravensgate, but that is not reflected on many other sites where numbers have changed little. However, this may not be good news as Large Skippers thrive in longer grass which could indicate an increase in the amount of long grass. Longer grass means less short turf for the butterfly species requiring a warmer short turf.

The number of Marbled Whites on Ravensgate has dropped by more than half this year. There have been mixed results from other sites with increases at some sites and decreases at others.

### **Management of the hill**

The hill is now being actively managed for wildlife, in particular for the butterflies. It is a wonderful site in that the topography naturally provides a variety of habitats. It is ideally suited to the Duke of Burgundy, which likes a north-facing slope with some scrub and long grass as this provides shelter from the wind and some shade for its food plant, the Cowslip. All butterflies require a different habitat, so a mosaic of different habitats, with different turf heights throughout the site would be ideal. This mosaic effect is usually achieved by grazing. A shorter turf at the top of the hill is good for butterflies such as Common Blue and Small Heath, while Large and Small Skipper, Marbled White and Ringlet require some longer grass. Removing coarse grasses and dead vegetation improves the flora which in turn helps the butterflies by providing a valuable nectar source. Certain butterflies also require specific flowering plants on which their larvae feed e.g. the Common Blue requires Bird's foot Trefoil. Hence improving the conditions for these specific plants is also beneficial for the butterflies.

The slope needs to be carefully managed to conserve the Duke of Burgundy which has specific habitat requirements i.e. the grass not too short and areas of scrub. It is important that this part of the site is not overgrazed. However the rest of the hill would benefit greatly from winter grazing.

Last year Toti Giffard provided cattle to graze the whole site from December to February. This has had a beneficial effect on the grassland. In the summer, cattle were put out on the south-western finger of the site (area P on the map) This had really reduced the length of the grass here which was long and rank with few flowering plants. In September, Toti cut the area on the top of the slope (area N and the area south of the footpath along the top (section A)) and removed the cuttings.

A scrub management programme has now been set up by Jenny Phelps in consultation with a bird expert and members of the management group. It is planned to remove some scrub from the slope over a period of a few years. Also to remove some Ash seedlings before they take over. The Cotswolds Wardens have agreed to help with this. Compartment fencing is to be installed on the slope to keep out the cattle so that the favoured area for the Duke of Burgundy does not get overgrazed. Some controlled grazing of the slope is required however, so it is planned to divide the slope into three compartments and put the cattle in a compartment for a short time each winter.

By continuing the butterfly transect and monitoring the rest of the hill for butterflies, we should be able to see the effects of management and make any adjustments to the management regime if required.

*(Butterfly photos in text and on cover by Andrew Daw, Glos Branch of Butterfly Conservation)*

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	17	17	17	13		18	19	15	23	17	17	25	21	21	25	23	18	19	20	20	18	21	18	20	13		
Mean Sun	50	70	100	100	100		60	100	60	20	15	100	90	55	100	100	75	10	25	100	85	40	97.5	85	95	95		
Small Skipper												1		9	6	19	6	5	2								48	48
Essex Skipper														1	1												2	2
Small/Essex Skipper																											0	0
Large Skipper											5	13	73	29	9	5	3		1								138	138
Dingy Skipper								2	3		1																6	6
Grizzled Skipper																											0	0
Clouded Yellow																											0	0
Brimstone					2	3	1	1								1	3			1							9	12
Large White									1				1		1	22	5	25	8		4	1	1				69	69
Small White																5	20		9	3	2						39	39
Green-veined White						1	3	2	2	3				1		10	1	14	1	7	9						53	54
Orange-tip				2																							2	2
Green Hairstreak								2	2		1																5	5
Purple Hairstreak																											0	0
Small Copper																	1		1								2	2
Small Blue																											0	0
Brown Argus																			1	1							2	2
Common Blue								1		1	1	1		1		1	2	11	22	8	10	4					63	63
Chalkhill Blue																											0	0
Holly Blue																			1								1	1
Duke of Burgundy								3	5																		8	8
White Admiral																											0	0
Red Admiral																						2		1			3	3
Painted Lady																1		1									2	2
Small Tortoiseshell	1												2	4	1	3							1				12	12
Peacock	2	3		7	2	1				1						6	17	9	4	2	2	1	2		1		60	61
Comma															1	1	1	2	1			1		1	8		16	16
Dark Green Fritillary																2			1								3	3
Silver-washed Fritillary																	1	1									2	2
Marsh Fritillary																											0	0
Speckled Wood						1	12	3		3	5	3	5	2	4				2	1	3	1	1	1	6		52	53
Wall																											0	0
Marbled White													4	22	34	31	22	5	1								119	119
Grayling																											0	0
Gatekeeper																4	12	23	1	12		2					54	54
Meadow Brown												4	29	14	24	18	22	12	13	7	6	4	6				159	159
Small Heath									3	3	3		4	3	3		1	1				2					23	23
Ringlet													53	144	174	65	17	13	6								472	472
Total	3	3	0	9	4	6	17	14	16	11	16	22	171	230	258	194	134	122	75	42	36	17	12	2	8	8	1424	1430

Table 1. Ravensgate - 2010 - Total butterflies recorded each week

**Table 2. Ravensgate - 2010 - Total butterflies recorded in each section**

<b>Section</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Total</b>
Small Skipper	26	11	11		48
Essex Skipper	1	1			2
Small/Essex Skipper					0
Large Skipper	59	33	41	5	138
Dingy Skipper	1	1	4		6
Grizzled Skipper					0
Clouded Yellow					0
Brimstone			9		9
Large White	31	13	23	2	69
Small White	17	7	11	4	39
Green-veined White	18	8	21	6	53
Orange-tip		2			2
Green Hairstreak			5		5
Purple Hairstreak					0
Small Copper	1	1			2
Small Blue					0
Brown Argus	2				2
Common Blue	55	1	7		63
Chalkhill Blue					0
Holly Blue				1	1
Duke of Burgundy		6	2		8
White Admiral					0
Red Admiral			3		3
Painted Lady	2				2
Small Tortoiseshell	6	4		2	12
Peacock	19	13	25	3	60
Comma	1		15		16
Dark Green Fritillary	2	1			3
Silver-washed Fritillary		1	1		2
Marsh Fritillary					0
Speckled Wood	1	7	38	7	53
Wall					0
Marbled White	89	20	8	2	119
Grayling					0
Gatekeeper	15	17	13	9	54
Meadow Brown	70	31	13	45	159
Small Heath	17	5	1		23
Ringlet	194	140	121	17	472
<b>Total</b>	<b>627</b>	<b>323</b>	<b>372</b>	<b>103</b>	<b>1425</b>

**Table 3. Ravensgate - Total butterfly species count for each year**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Avg (05-09)</b>
Number of species	24	29	22	20	23	28	24
Small Skipper	114	77	25	52	63	48	66
Essex Skipper	8	1	0	1	0	2	2
Small/Essex Skipper	0	8	4	0	0	0	2
Large Skipper	32	53	44	49	81	138	52
Dingy Skipper	0	0	0	0	0	6	0
Grizzled Skipper	0	0	0	0	0	0	0
Clouded Yellow	0	1	0	0	0	0	0
Brimstone	17	16	16	20	10	9	16
Large White	22	22	10	16	85	69	31
Small White	22	17	9	20	50	30	24
Green-veined White	12	37	18	12	64	53	29
Orange-tip	3	1	0	3	2	2	2
Green Hairstreak	4	3	2	0	7	5	3
Purple Hairstreak	1	0	0	0	0	0	0
Small Copper	0	1	0	0	0	2	0
Small Blue	2	3	0	0	0	0	1
Brown Argus	2	0	0	0	0	2	0
Common Blue	13	32	2	1	9	63	11
Chalkhill Blue	0	0	0	0	0	0	0
Holly Blue	3	5	1	8	0	1	3
Duke of Burgundy	0	2	0	0	3	8	1
White Admiral	0	0	0	0	0	0	0
Red Admiral	13	23	5	8	10	3	12
Painted Lady	0	5	0	0	61	2	13
Small Tortoiseshell	14	2	0	1	14	12	6
Peacock	42	127	48	44	78	60	68
Comma	19	31	6	10	16	16	16
Dark Green Fritillary	0	0	2	0	1	3	1
Silver-washed Fritillary	0	2	1	0	0	2	1
Marsh Fritillary	0	3	1	0	0	0	1
Speckled Wood	49	58	39	51	54	53	50
Wall	0	1	0	0	1	0	0
Marbled White	266	401	351	280	269	119	313
Grayling	0	0	0	0	0	0	0
Gatekeeper	174	191	141	179	103	54	158
Meadow Brown	385	420	184	252	214	159	291
Small Heath	27	50	14	14	27	23	26
Ringlet	195	295	251	576	677	472	399
<b>Totals</b>	<b>1439</b>	<b>1888</b>	<b>1174</b>	<b>1597</b>	<b>1899</b>	<b>1424</b>	<b>1599</b>

**Table 4. Ravensgate - Presence of butterfly species on whole site  
(both on and off transect)**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Priority status</b>
Number of species	21	26	28	23	26	30	
Small Skipper	Y	Y	Y	Y	Y	Y	
Essex Skipper	Y	Y	Y	Y	?	Y(T)	
Large Skipper	Y	Y	Y	Y	Y	Y	
Dingy Skipper	?	?	Y	Y	Y	Y	<i>High</i>
Grizzled Skipper							
Clouded Yellow		Y(T)					
Brimstone	Y	Y	Y	Y	Y	Y	
Large White	Y	Y	Y	Y	Y	Y	
Small White	Y	Y	Y	Y	Y	Y	
Green-veined White	Y	Y	Y	Y	Y	Y	
Orange-tip	Y	Y	Y	Y	Y	Y(T)	
Green Hairstreak	Y	Y	Y	Y	Y(T)	Y	<i>Medium</i>
Purple Hairstreak							
White-letter Hairstreak							
Small Copper		Y(T)				Y	
Small Blue	?	?	Y	?	Ova	Y	<i>High</i>
Brown Argus	Y(T)					Y	
Common Blue	Y	Y	Y	Y	Y	Y	
Holly Blue	?	?	Y	Y		Y(T)	
Duke of Burgundy	?	Y	Y	Y	Y	Y	<i>High</i>
White Admiral							
Red Admiral	Y	Y	Y	Y	Y	Y	
Painted Lady	?	Y	Y		Y	Y(T)	
Small Tortoiseshell	Y	?	Y	Y(T)	Y	Y	
Peacock	Y	Y	Y	Y	Y	Y	
Comma	Y	Y	Y	Y	Y	Y	
Dark Green Fritillary			Y		Y (T)	Y	<i>Medium</i>
Silver-washed Fritillary		Y(T)	Y(T)			Y(T)	
Marsh Fritillary	?	Y	Y		Y		<i>High</i>
Speckled Wood	Y	Y	Y	Y	Y	Y	
Wall		Y			Y(T)	Y	<i>High</i>
Marbled White	Y	Y	Y	Y	Y	Y	
Grayling							
Gatekeeper	Y	Y	Y	Y	Y	Y	
Meadow Brown	Y	Y	Y	Y	Y	Y	
Small Heath	Y	Y	Y	Y	Y	Y	<i>High</i>
Ringlet	Y	Y	Y	Y	Y	Y	

Y(T): Species recorded only on transect walks

Ova: no butterfly recorded, but eggs found on food plant

**Table 5. Ravensgate Casual records - 2010 Butterflies recorded at each visit**

Day	19	21	24	26	28	30	1	4	13	16	18	27	8	19	11	15	9	Total
Month	5	5	5	5	5	5	6	6	6	6	6	6	7	7	8	8	9	
Length of visit (min)	20	30	60	30	90	60	25	20	30	15	15	30	45	60	15	30	15	
Recorder	JC	JC	TA	JC	JH	TA	JC	JC	JC	JC	JC	JC	JH	TA	JC	JH	JH	
Small Skipper														5				5
Essex Skipper																		0
Small/Essex Skipper													10					10
Large Skipper									35	20	10	34	6	5				110
Dingy Skipper	1	1	7	1	6	8	2			1								27
Grizzled Skipper																		0
Clouded Yellow																		0
Brimstone		1	2											1	1	2		7
Large White			2											12	1			15
Small White														1		5	1	7
Green-veined White					1				1					5	2	7		16
Orange-tip																		0
Green Hairstreak		2	5															7
Purple Hairstreak																		0
Small Copper			2											1				3
Small Blue							1					6 Ova				5		6
Brown Argus									1							4		5
Common Blue				1	6	3		4	3	1				3	14	33	2	70
Chalkhill Blue																		0
Holly Blue																		0
Duke of Burgundy	1	20		26		22	15	13	4	1								102
White Admiral																		0
Red Admiral																1		1
Painted Lady																		0
Small Tortoiseshell												3						3
Peacock			1	1										3	2	2		9
Comma														3				3
Dark Green Fritillary														1	1			2
Silver-washed Fritillary																		0
Marsh Fritillary																		0
Speckled Wood	5	2	2						1		1	1		1				13
Wall									1									1
Marbled White												6	39	43				88
Grayling																		0
Gatekeeper														15	5	13		33
Meadow Brown										2	1	6	14	19	5	11		58
Small Heath			13	1	11	8	1	6	13			14	7		12	12		98
Ringlet												18	55	59	1			133
<b>Total</b>	<b>7</b>	<b>26</b>	<b>34</b>	<b>30</b>	<b>24</b>	<b>41</b>	<b>19</b>	<b>23</b>	<b>59</b>	<b>25</b>	<b>12</b>	<b>82</b>	<b>131</b>	<b>177</b>	<b>44</b>	<b>95</b>	<b>3</b>	<b>832</b>

Note these are recordings on separate visits. Hence individual butterflies could be recorded on more than one visit.

**Table 6. Ravensgate Casual records 2010 - Butterflies recorded in each 'section'**

Section	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Total
Small Skipper					1	2						1	1		5
Essex Skipper															0
Small/Essex Skipper					6	2	2								10
Large Skipper					22	6	24	24	4	15	10	2		3	110
Dingy Skipper			1		5	5	1	7	3	2	3				27
Grizzled Skipper															0
Clouded Yellow															0
Brimstone		1	1			1	2				1		1		7
Large White					3	1		2	2	1	4		2		15
Small White					3	2	1						1		7
Green-veined White					1	5	3	1	3		1		1	1	16
Orange-tip															0
Green Hairstreak			3			3				1					7
Purple Hairstreak															0
Small Copper					2								1		3
Small Blue						2	1				3				6
Brown Argus					2	3									5
Common Blue					13	23	16	2			16				70
Chalkhill Blue															0
Holly Blue															0
Duke of Burgundy		5	2					35	16	43	1				102
White Admiral															0
Red Admiral						1									1
Painted Lady															0
Small Tortoiseshell											1			2	3
Peacock					1	2	4	1	1						9
Comma								2	1						3
Dark Green Fritillary						2									2
Silver-washed Fritillary															0
Marsh Fritillary															0
Speckled Wood						1	7	4	1						13
Wall		1													1
Marbled White					17	21	16	2			16	4	6	6	88
Grayling															0
Gatekeeper						5	11	7	5		3			2	33
Meadow Brown					6	17	18	2	1	1	5	1	2	5	58
Small Heath	3	1	1		52	18	2	3	3		15				98
Ringlet					21	18	26	13	17		18	2	11	7	133
<b>Total</b>	<b>3</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>155</b>	<b>140</b>	<b>134</b>	<b>105</b>	<b>57</b>	<b>63</b>	<b>97</b>	<b>10</b>	<b>26</b>	<b>26</b>	<b>832</b>

N.B. These are number of observations of butterflies.

An individual butterfly may be recorded on more than one occasion.

These are casual recordings, rather than systematic recordings as on a transect.

Numbers of butterflies recorded in each section depend heavily on recorder activity

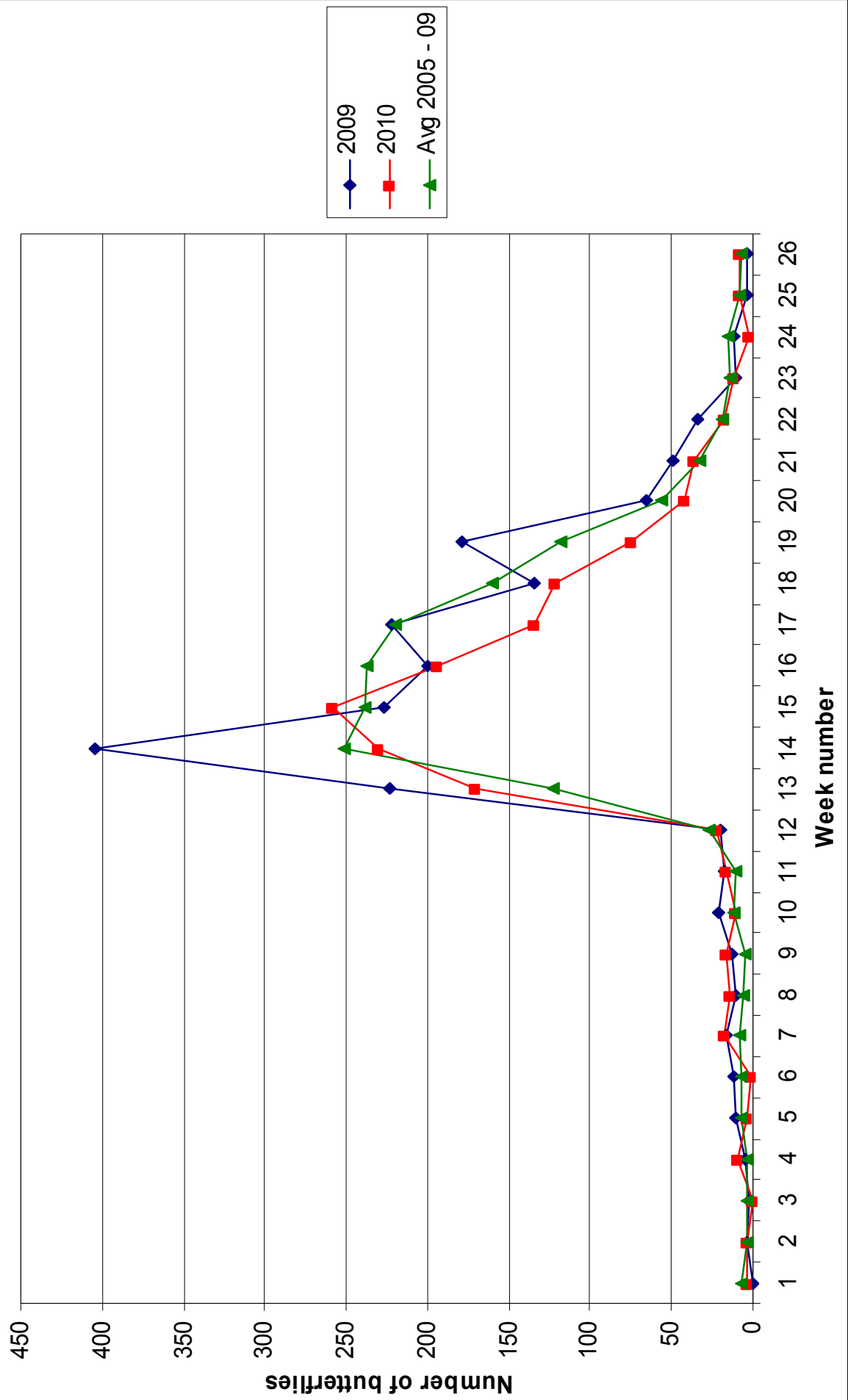
ie. how often the sections are monitored

**Table 7. Day-flying moths recorded on Ravensgate in 2010**

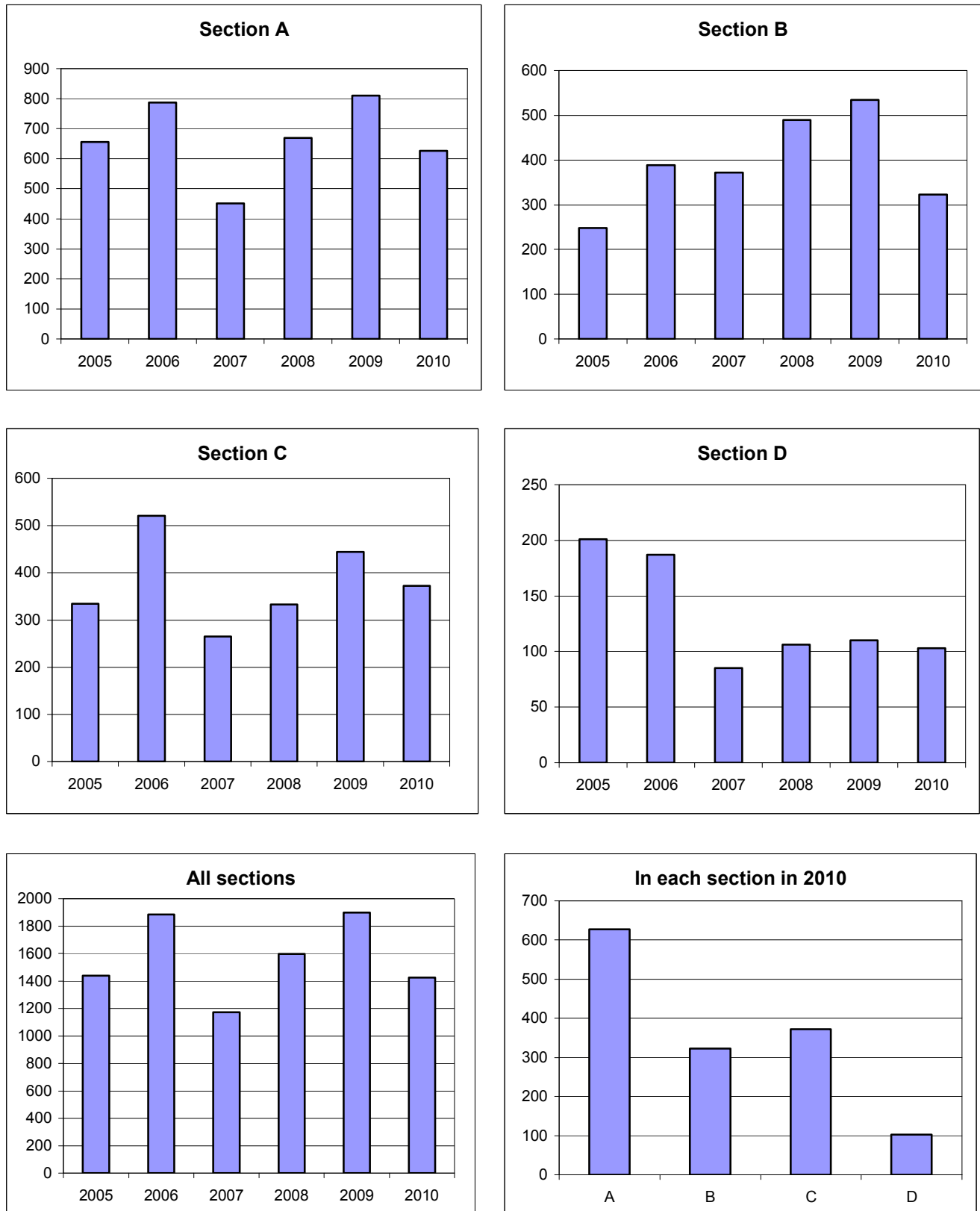
No moth trapping was carried out on the site in 2010, but some day-flying moths were recorded whilst recording the butterflies.

<b>Date</b>	<b>Week</b>	<b>Moths Seen</b>	<b>Location</b>	<b>Recorder</b>
23 May	8	1 Burnet Companion	Off transect	JC
28 May	9	3 Cinnabar moth 1 Mother Shipton	Off transect	JH
30 May	9	4 Cinnabar moth 4 Burnet moth 1 Mother Shipton	Off transect	TA
7 June	10	6 Cinnabar moth	Section B	PA
12 June	11	1 Cinnabar moth  3 Burnet Companion	Section B  Section A	TA
16 June	11	10 Burnet Companion  1 Wood Tiger moth	Section A  Section K	TA  JC
18 June	11	1 Burnet Companion 1 Wood Tiger  1 Wood Tiger	Section K  Section H	JC
17 July	16	1 Hummingbird Hawkmoth	Section B	TA
19 July	16	2 Cinnabar larvae  1 Silver Y moth	Section B  Section N	TA

Figure 1. Ravensgate - Number of butterflies recorded each week in 2009 and 2010 and average for 2005 - 2009

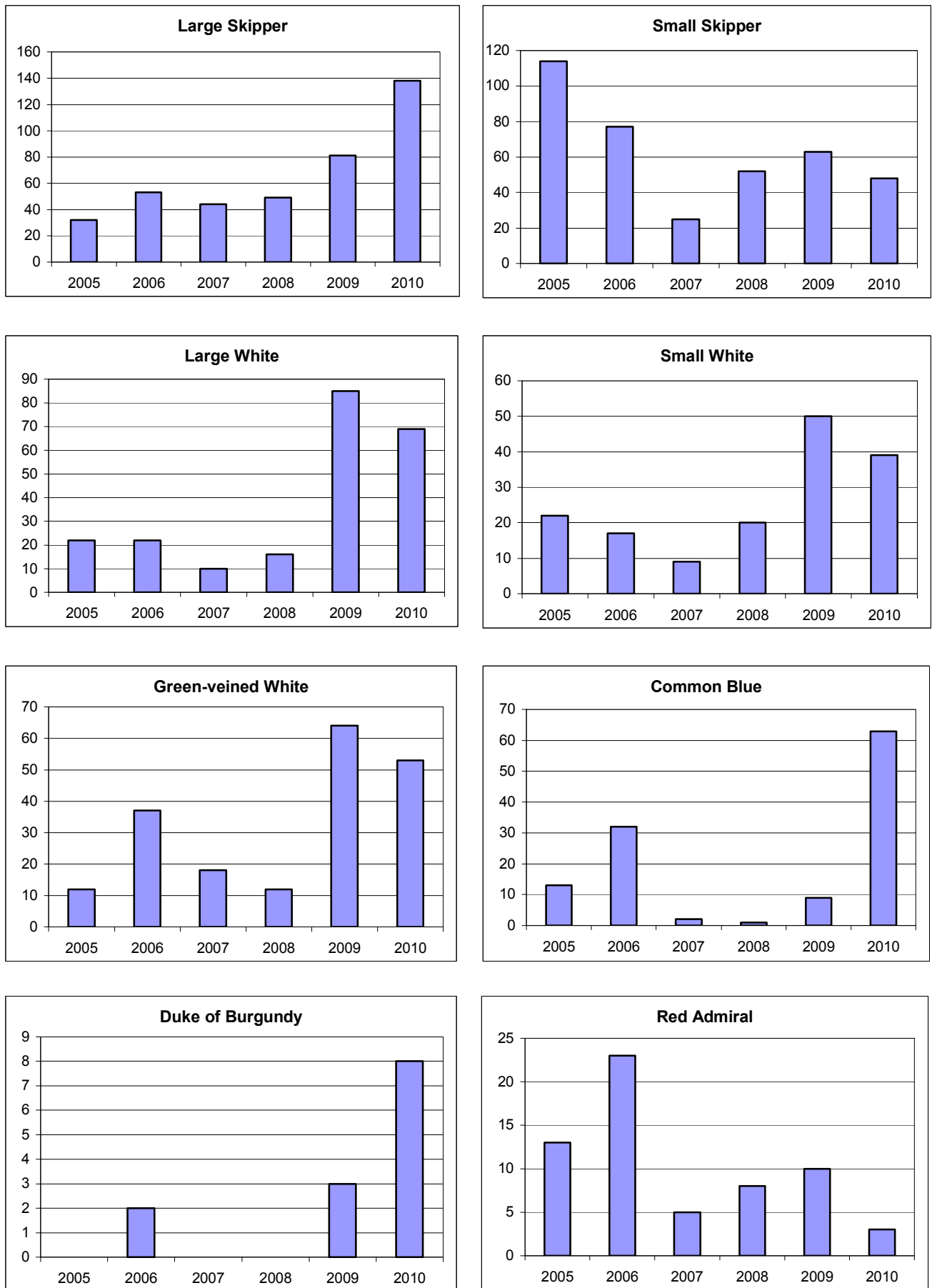


**Figure 2. Number of butterflies in each section 2005 - 2010**



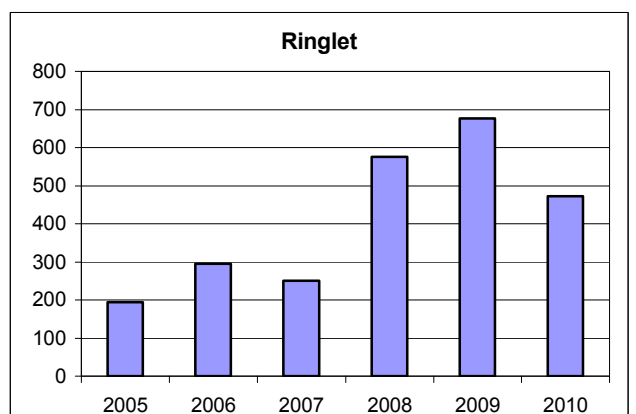
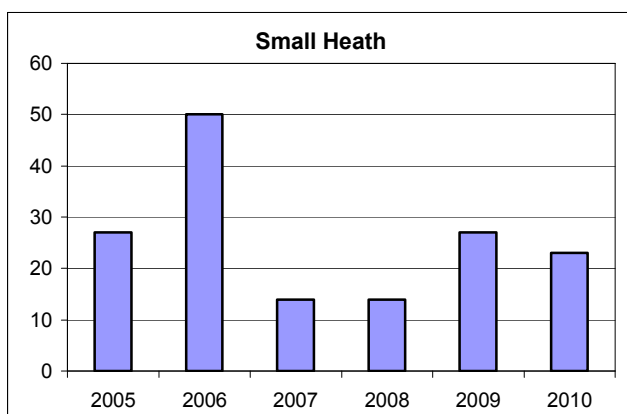
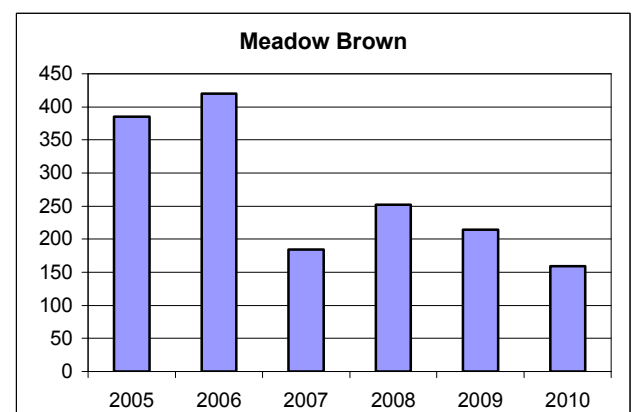
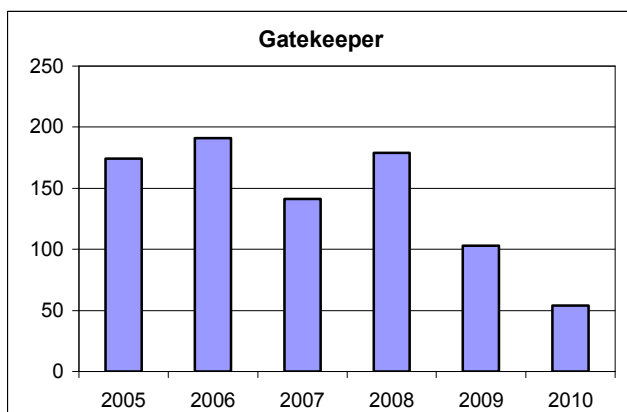
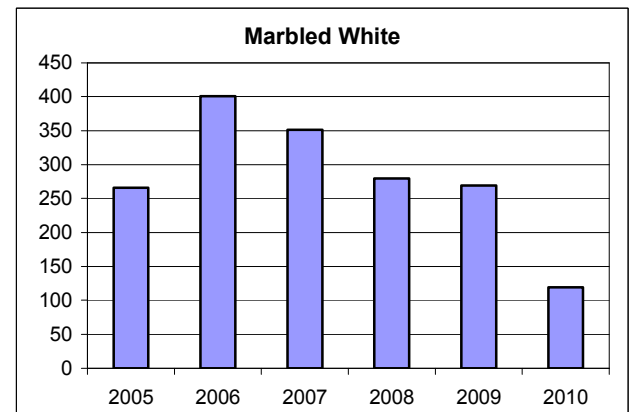
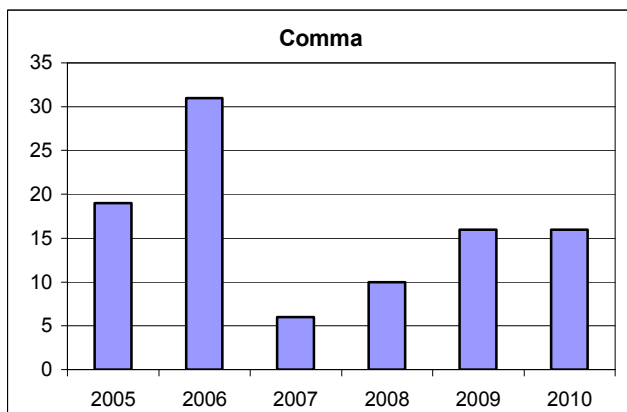
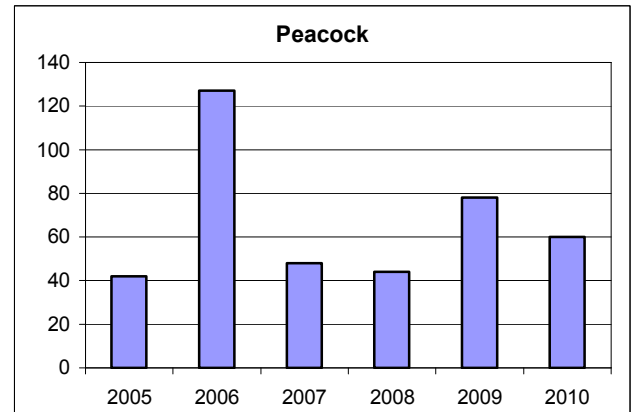
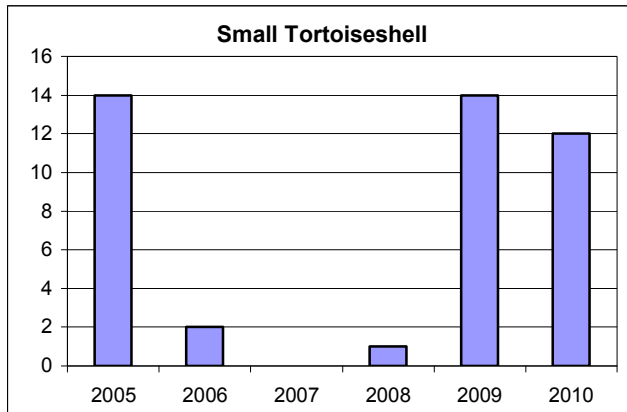
Note that the scales for each chart are not the same!

**Figure 3. Trends for several species**



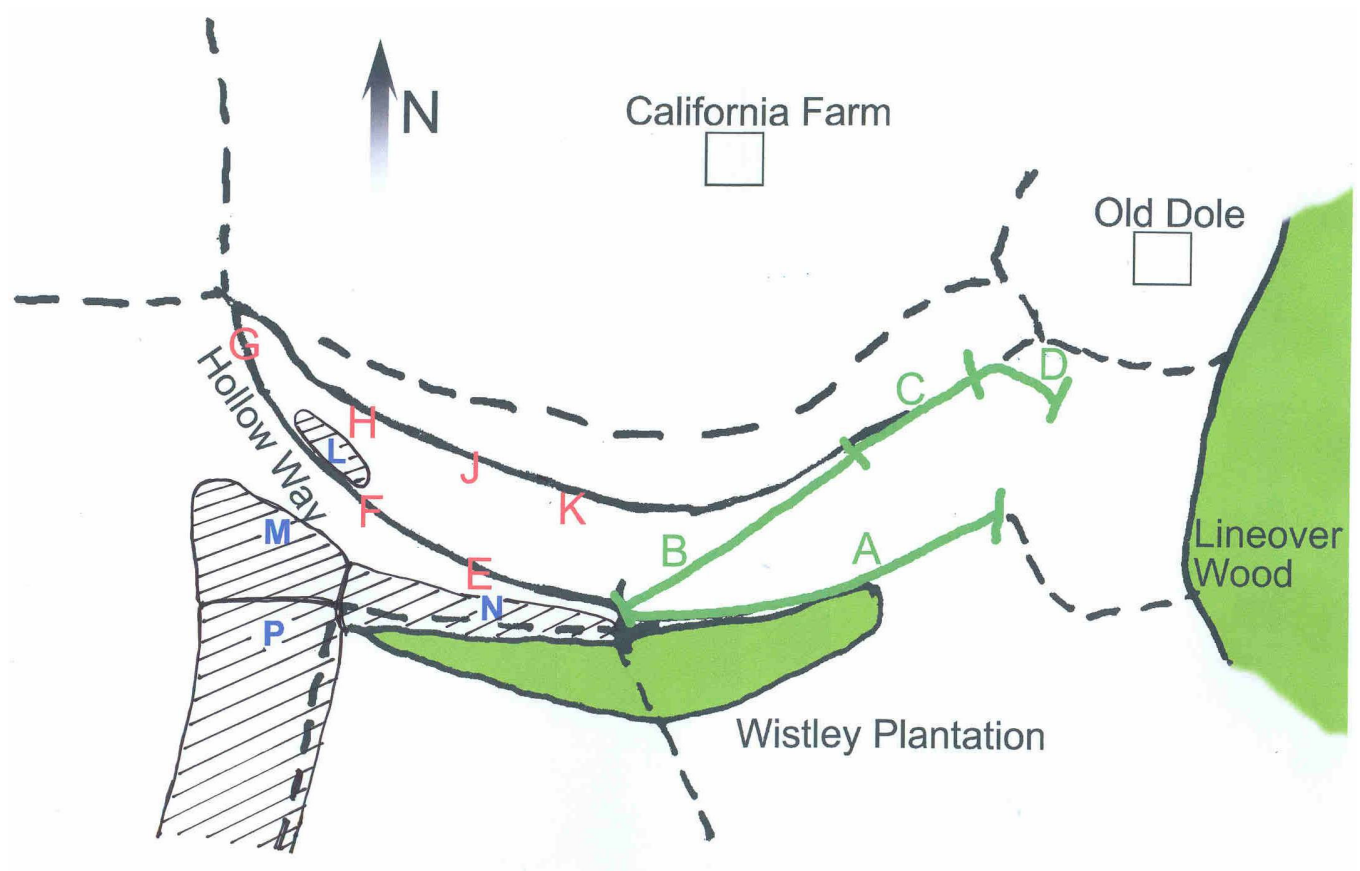
NB. The scales for each chart are not the same!

**Figure 3 (Continued). Trends for several species**



NB. The scales for each chart are not the same!

**Figure 4. Map of transect and sections off-transect**



**Note**

Transect route and sections A, B, C, D (in green)

Off-transect 'sections' E, F, G, H, J, K (in red)

Other areas of hill surveyed L, M, N, P (in blue on shaded areas)

**Figure 5. Weather records from 2000 to 2010**  
**(Average of observations from Ross-on-Wye and Oxford)**

