



Butterfly Conservation
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Hertfordshire and Middlesex Branch

<http://www.hertsmiddx-butterflies.org.uk/>

HERTFORDSHIRE AND MIDDLESEX BUTTERFLY REPORT 2007

John B. Murray & Andrew Wood



Price £5
to non branch members

May 2008

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Introduction

This report comes hot on the heels of the very late 2006 report so we have tried to catch up as far as possible. Unfortunately this has meant that there is no moth report this year as time has been taken up with the production of "The Moths of Hertfordshire" which should be on sale soon after you receive this report.

2007 has been an interesting year for butterflies, and is the third year of our 5-year period 2005-2009 to map the distribution of butterflies in our two counties. A glance at the distribution maps for Orange Tip, Meadow Brown, Green-veined White & Speckled Wood, which should be in virtually every square, will show that there are still plenty of unknown areas for you to explore, and will indicate which tetrads need visiting in May, July and August. The principle blank areas are: 1. between Ware, Buntingford and Bishops Stortford, 2. between Hertford and Enfield, 3. north and west of Hemel Hempstead, and 4. much of west and southwest Middlesex. If you can cover any of these areas, then look at the section "How to record butterflies" near the end of this report for instructions on butterfly mapping, and download recording forms from the branch website at <http://www.hertsmiddx-butterflies.org.uk>.

John Murray

Contributors

The following is a list of those from whom butterfly records relating to 2007 have been received, together with the number of tetrads from which observations were received, the number of records and the number of transect walks carried out.

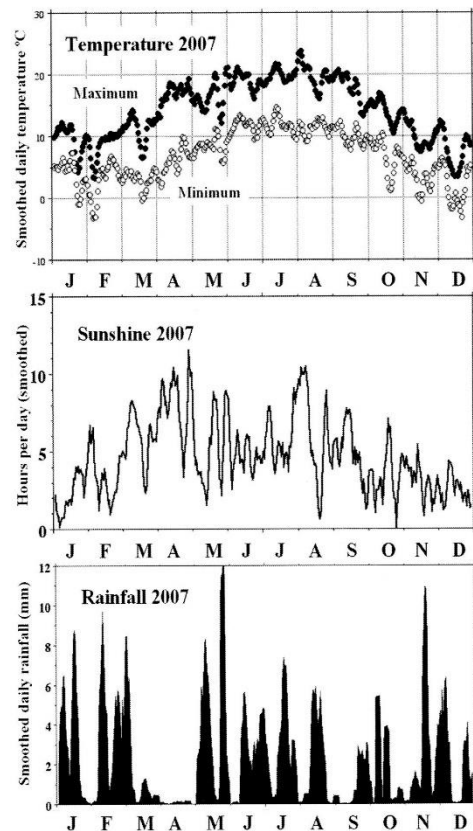
Name	Tetrads	Records	Transects	Name	Tetrads	Records	Transects
Jill Aberdour	2	15		Trevor Chapman	12	25	
Nigel Agar	6	8		Tony Clancy	3	9	
Diane Andrews	29	89		Peter Clarke	2	20	19
Joan Austin	2	14		Tom Clarke	3	5	
Stuart Ball	1	1		Paul Clay	1	1	
Cuillin Bantock	1	36		Bob Clift	1	27	26
Helen Bantock	1	1		Alan Cockburn	1	38	
Tristan Bantock	1	1		Ashley Cox	3	3	
Mark Barclay	1	3		Bob Cripps	3	9	
John Bater	1	22	22	Evelyn Crisp	1	2	
Ellie Beach	1	17	17	Andrew Culshaw	4	123	25
Alan Beale	3	74	74	Peter Day	1	1	
Roy Beddard	1	5	5	Chis Dee	1	1	
Michael Berthoud	1	8	8	Tony Dorman	1	1	
David Bevan	1	3	2	Lawrence Drummond	1	1	
Dennis Bird	1	1		Ian Edwards	4	4	
Steve Bolsover	2	2		Cherry Eggleton	1	2	
David Booth	3	5		Graham Elcombe	1	1	
Les Borg	2	4		Colin Everett	4	5	2
Nick Bowles	3	7		Jane Fielding	1	108	
B. Bowsher	1	3	3	Jim Fish	1	2	
Tony Bristow	1	26		Kim Fleming	3	4	
Reg Brittain	1	1		Chris Frost	1		
Andy Brown	1	14	14	Val Fullforth	1	21	21
Andy Brown (HMWT)	1	2	2	Nick Furtek	3	18	
Darrel Bryant	4	5		Alan Gardiner	2	2	
Clive Burrows	6	9		Ched George	1	2	
Robert Callf	16	352		Helen George	2	3	
Fiona Carson	2	9		Jacqueline George	11	50	
David Chandler	4	17		Bob Gillam	1	1	1
Violet Chandler	1	26	26	David Gompertz	1	5	
				Terry Goody	11	37	

Name	Tetrads	Records	Transects	Name	Tetrads	Records	Transects
Liz Goodyear	23	62		Gwyneth			
Paula Greenway	1	1		Pearman-Jenkins	1	18	18
Donald Gregory	1	1		Michael Pearson	1	24	24
Ian Hardy	4	8		Robin Pearson	5	13	
Richard Harrington	1	1		Malcolm Penn	2	3	
Jack Harrison	1	1		Peter Peretti	1	1	
Steve Hawkins	1	1		Jez Perkins	5	5	
Jean Hayes	4	14		Caroline Phillips	1	9	9
Michael Healy	4	17		Ann Piper	16	58	
Martin Hicks	1	25	22	Stuart Pittman	5	11	1
Sezar Hikmet	1	2		Adrian Pomfret	1	1	
Tim Hill	1	1		Brian Price	1	1	
David Hollingdale	1	1		Catherine Price	1	10	10
John Hollingdale	29	113		Roger Prue	1	26	26
Janet Holmes	1	12	12	Simon Rasch	6	6	
Neale Holmes-Smith	2	46	46	R. Renwick	1	11	11
Andy Holtham	1	15	15	Alan Reynolds	4	5	
David Howdon	6	174	44	Phil Rhodes	1	1	
Margaret Huitson	2	3		Andrew Riche	1	1	
Malcolm Hull	16	57	17	Ann Rix	1	25	25
Geoffrey Hunt	4	4		Michael Robinson	1	1	
Alan Jackson	2	2		Terry Rodbard	1	1	
Garry James	1	1		Donald Rooum	1	26	26
Trevor James	2	2		Mike Rubin	6	44	
Brian Jessop	8	73	38	Sandra & Kevin			
Cliff Jones	1	1		Sandbridge	2	3	
Steve Kiln	3	29		Andrew Self	1	14	*
Andrew King	2	2		Ian Shepherd	1	3	3
Jon King	19	65		Martin Shepherd	1	1	
Ken King	1	22	20	Ian Small	2	3	
Michael Kings	16	29		Carol Smith	1	2	
Steve Lane	5	18		Martin Smith	1	4	4
Archie Lang	1	1		E. Stainthorpe	1	1	
Sheila Lee	1	24		Darin Stanley	7	23	
Annabel Lever	1	1		Jan Hein Van Steenis	4	4	
Phil Lumley	1	21	21	Sue Stephens	1	7	7
Terry Lyle	1	23	23	Roy Stringer	1	1	
Dave Mackenzie	2	4		Colin Sturges	2	2	
Guy Manners	1	1		Mary Taylor	1	1	1
Steve McLaren	1	1		Mike Taylor	6	39	
Mark Mcmanus	1	1		Ian Thompson	1	1	
Simon Mercer	1	10	10	Paul Thrush	1	3	
Andrew Middleton	41	123		Neville Trudgill	1	1	
John Moss	11	137	45	Rebecca Turpin	1	12	12
Keir Mottram	1	1		Chris Tyler-Smith	6	8	
Tony Moverley	1	3		Andrew Verrall	1	1	1
John Murray	1	20	20	Gavin Vicary	2	26	25
Steve Murray	4	12		Pat Watt	1	25	25
Peter Naylor	1	2		Bob Watts	1	1	
Malcolm Newland	2	4		Robin White	2	2	
Margaret Noakes	1	18	19	Leslie Williams	1	8	14
Andrew Palmer	5	14		Ray Williams	1	1	
Martin Parr	1	1		Wendy Wilson	3	7	
Nigel Parsons	2	7		Andrew Wood	43	193	22
Steve Pash	2	5		Jane Wood	1	11	
Stuart Paston	1	1		Kate Wood	1	2	
V.W. Patterson	7	19		Stephen Wood	1	1	
Richard Payne	1	1	1	Phil Woodward	1	1	
				Jane Worroll	2	39	39

Archiving: all original observations received for the project will be archived at the Museum Resource Centre, Bury Mead Road, Hitchin, Herts.

Weather in 2007

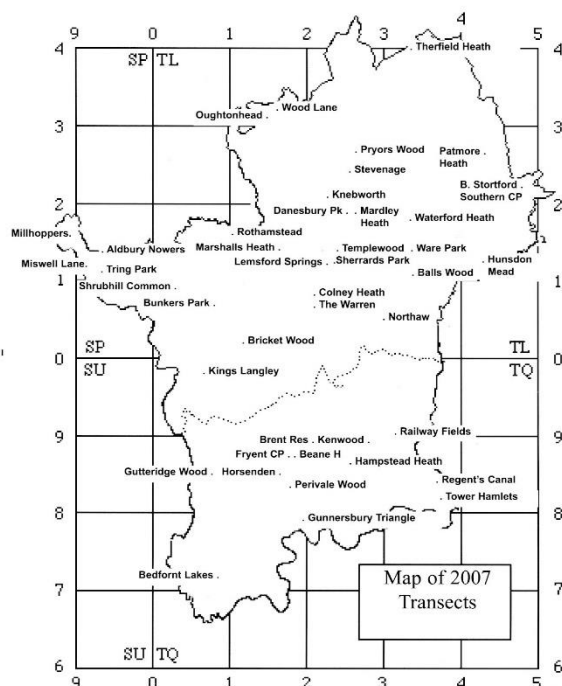
Presumably the weather was responsible for the strange behaviour of butterflies in 2007, and the winter 2006-7 was probably critical to all that happened afterwards. It was the warmest winter (December to February) on record for England, with temperatures 3°C higher than the 1961-1990 average in our part of the world. This was followed by the fifth sunniest March in the last 100 years, and the hottest April since 1659, with virtually no rainfall. Things suddenly changed in May, which was the wettest since 1967. The summer months June, July & August were little better, being the wettest for the UK since 1912, though our two counties were lucky in escaping the intense rainfall and flooding of west-central England. Sunshine remained well below average at about half that experienced during April until the beginning of August, which was the warmest time of the year. Summer temperatures were actually close to the seasonal average, as were those in autumn and winter. Graphs of temperature and rainfall are shown here, recorded in John Murray's garden at Marshalls Heath. These are supplemented by records from Rothamsted Experimental Station during absences, and the sunshine graph is from Rothamsted data alone. All graphs are smoothed as 5-day moving means.



2007 Overview

2007 has been one of the most unusual butterfly years since our branch was formed in 1995. Numbers were generally low, but the flight seasons of many species were exceptionally early, more than one-third of our earliest records being equalled or broken. This did not only apply to the spring species: the average peak flight date for all single-brooded species was 27 days earlier than the 1995-2006 average. During the warmest winter ever, **Red Admirals** were seen on January 1st and almost every week throughout the winter, beating all records. **Peacock** appeared on January 19th, and then, unbelievably early, a **Speckled Wood** on January 20th, the earliest ever by 47 days. This set the tone for the rest of the year: **Brimstones** appeared on 1st February and **Commas** on the 3rd (earliest ever), and in March, **Holly Blue** and **Green-veined Whites** appeared on earliest-ever dates, and both had good years with increased numbers. **Small Tortoiseshell** & **Small White** both had reasonable years with small increases, whilst **Large White** and **Orange Tip** had lower numbers and early peak dates. In April, **Brown Argus**, **Small Heath** and **Dingy Skipper** all appeared earlier than ever before, but decreased in numbers, and **Grizzled Skipper**, **Green Hairstreak** and **Common Blue** all had lower abundances, though **Small Copper** just about held steady. **Large Skipper** had a slight decrease, and in June **Small Skipper** appeared earlier than ever, though with **Essex Skipper** it suffered a substantial decline. **White Admiral** surprised everybody by appearing on 9th June, earlier than ever, and 2 days later **Marbled White** also broke its earliest record, as did **Dark Green Fritillary** 6 days later, which had its best year probably since the 1960s, and **Silver-washed Fritillary** did well, though at about half last year's record numbers. Both Fritillaries may have bred here. **Purple Hairstreak** had an early season, but decreased, as did **White-letter Hairstreak**. The migrants had an average year, with **Painted Lady** and **Clouded Yellow** appearing in small numbers, and there were four sightings of **Camberwell Beauty**, seen for the 3rd year in succession. **Ringlet** and **Gatekeeper** didn't do too well, nor **Meadow Brown**, but the latter was seen at the extraordinarily late date of October 29th, a fortnight later than ever before, and **Holly Blue** did the "double" by breaking records at this end of the season too, on 3rd November. 2007 has some parallels with 1997, which had an exceptionally warm spring and a very wet June, which led to 10 earliest-ever records being broken at that time, though some of those were re-broken in 2007.

Transects are the main method of measuring how butterfly populations change with time. The technique is simple, involving walking the same set route every week in good weather throughout the summer months, and noting down the numbers of each species of butterfly seen within about 5 metres. The method is described later on under “How to record butterflies”, but for full details, write to John Murray for a transect package.



Name	Grid Ref	Organiser	Species	Duration	Completedness
1 Aldbury Nowers	SP952129	Martin Hicks	26	77 mins	4 weeks missing
2 Balls Wood	TL344106	Andrew Wood	17	30 mins	2 weeks missing
3 Beane Hill	TQ199873	Leslie Williams	15	38 mins	Complete
4 Bedfont Lakes	TQ080724	Adam Cheeseman	18	79 mins	13 weeks missing
5 Bishops Stortford	TL473193	Bob Clift	22	66 mins	Complete
6 Brent Reservoir	TQ213873	Andrew Self	18		7 weeks missing
7 Bricket Wood	TL131009	Malcolm Hull	22	91 mins	7 weeks missing
8 Bunkers Park	TL079058	Michael Pearson	19	70 mins	2 weeks missing
9 Colney Heath	TL203057	John Moss	18	35 mins	4 weeks missing
10 Danesbury Park	TL230170	Pat Watt	19	34 mins	1 week missing
11 Fryent Country Park	TQ195876	Leslie Williams	15	68 mins	Complete
12 Gunnersbury Triangle	TQ201786	Andy Brown	14	42 mins	14 weeks missing
13 Gutteridge Wood	TQ091843	Ann Rix	16	44 mins	1 week missing
14 Hampstead Heath	TQ264870	Richard Payne	15	50 mins	2 weeks missing
15 Horsenden Hill East	TQ163844	David Howdon	20	46 mins	2 weeks missing
16 Horsenden Hill West	TQ163844	David Howdon	20	39 mins	2 weeks missing
17 Hunsdon Mead	TL416108	Ellie Beach	13	39 mins	8 weeks missing
18 Kenwood	TQ271874	Mike Taylor	16	46 mins	1 week missing
19 Kings Langley	TL068039	Violet Chandler	14		Complete
20 Knebworth Park	TL221208	Ken King	22	89 mins	6 weeks missing
21 Lemsford Springs	TL223121	Neale Holmes-Smith	15	25 mins	2 weeks missing
22 Mardley Heath	TL248184	Caroline Phillips	16	66 mins	10 weeks missing
23 Marshalls Heath	TL 161149	John Murray	22	36 mins	6 weeks missing
24 Millhoppers	SP900149	Margaret Noakes	19	38 mins	7 weeks missing
25 Miswell Lane	SP914117	Brian Jessop	16	21 mins	9 weeks missing
26 Northaw Great Wood	TL285043	Jane Worroll	13	17 mins	4 weeks missing
27 Northaw Gt Wd Bridleway	TL285043	Jane Worroll	12	17 mins	5 weeks missing
28 Oughtonhead Common	TL169303	Phil Lumley	20		5 weeks missing
29 Patmore Heath	TL 443257	Gavin Vicary	22	29 mins	1 week missing
30 Perivale Wood	TL159837	David Howdon	19	32 mins	1 week missing
31 Pryor's Wood	TL265265	Andy Holtham	16	27 mins	5 weeks missing

Name	Grid Ref	Organiser	Species	Duration	Completeness
32 Railway Fields	TQ317881	David Bevan	12	21 mins	Complete
33 Regents Canal	TQ356830	Donald Rooum	7		Complete
34 Rothamsted Farm	TL121137	John Bater	16	41 mins	5 weeks missing
35 Sherrardspark Reddings	TL230135	G. Pearman-Jenkins	13	37 mins	8 weeks missing
36 Shrubhill Common	TL036072	Roger Prue	21	78 mins	Complete
37 Stevenage	TL246234	Peter Clarke	18	75 mins	7 weeks missing
38 Templewood Vale	TL235143	Neale Holmes-Smith	16	26 mins	4 weeks missing
39 The Warren	TL204053	John Moss	18	38 mins	3 weeks missing
40 Therfield Heath	TL348401	Alan Beale	11	8 mins	Complete
41 „ Base of Church Hill	TL333395	Alan Beale	15	11 mins	Complete
42 „ Church Hill	TL333396	Alan Beale	13	6 mins	Complete
43 „ Lankester Hill	TL353404	Alan Beale	21	14 mins	Complete
44 „ Top of Rifle Range	TL349398	Alan Beale	18	22 mins	Complete
45 Tower Hamlets	TQ365823	Terry Lyle	20	80 mins	3 weeks missing
46 Tring Park	SP930105	Brian Jessop	24	81 mins	7 weeks missing
47 Ware Park	TL347143	Andrew Wood	23	36 mins	4 weeks missing
48 Waterford Heath North	TQ317154	Janet Holmes	17	48 mins	13 weeks missing
49 Wood Lane, Pirton	TL140310	Val Fullforth	20		4 weeks missing

Species is the number of species recorded on the transect in 2006, *Duration* is the average time the transect took to walk, and *Completeness* gives the number of weeks out of the 26 between April 1st and September 29th when the transect could not be walked.

Transect Roundup

This year, only notes received from the transect walkers or organisers are included.

Aldbury Nowers SP 952 129

First walked: 1992 **2007 recorder:** Martin Hicks

"This year's results were significantly down on previous years, with 1900 sightings, making up less than two-thirds of the numbers seen in recent years. This was probably due to the poor weather but also in part to conservation works which have removed significant areas of rank grassland and ruderal vegetation.

However, some of these developed large clumps of musk and creeping thistle, providing good nectar sources and increased Nymphalid numbers. 27 species were seen, including low numbers of Grizzled and Dingy Skippers but also Dark Green and Silver-washed Fritillaries. Half a dozen Green Hairstreaks were missed by 5 minutes, although they were not seen again despite 2 hours observation by 3 people! The site continues to retain its value, but securing appropriate grazing management is still an urgent priority."

Martin Hicks

Balls Wood TL 344 106

First walked: 1994 **2007 recorders:** Andrew Wood & Rob Hopkins

"The overall numbers were down by 22% following a 30% fall in 2006. This fall can be attributed to the poor summer weather rather than any environmental changes as drops like this were seen on transects all over the two counties. The summer peak saw only 3 weeks with over 100 butterflies recorded compared to 5 weeks in 2006, and only 2 weeks with over 150 compared to 3 in 2006 and 5 in 2005. Spring numbers were well up, reflecting the summer-like conditions of April but after that it was downhill." Andrew Wood, (from Wood 2007a)

Beane Hill TQ 199 873

First walked: 1988 **2007 recorders:** Leslie Williams, Michael Berthoud, Simon Mercer

See notes for Fryent Country Park.

Bedfont Lakes TQ 080 724

First walked: 1996 **2007 recorder:** Adam Cheeseman

This transect has been walked both in 2006 and 2007, but records were received too late for inclusion in the analysis of this report. Prior to this, it was walked from 1996 until 2003.

Bishops Stortford Southern Country Park

First walked: 2004 **2007 recorder:** Bob Clift

"The number of recordings on my transect is certainly down on the last two years, especially during the peak weeks in July, but I have been very pleased to add two new species to my list this year: Brown Argus and Small Heath, making this year's total 22. It would have been 23 if I had managed to record a Comma, the first year I haven't seen one. Ringlets were up in numbers this year though, whereas Common Blues were thin on the ground – even though Birdsfoot Trefoil was the best I have ever seen it. Silver Y moths were conspicuous by their absence – normally I see hundreds, but I only recorded 4 this year". Bob Clift

Brent Reservoir TQ 213 873

First walked: 2000 **2007 recorders:** Andrew Self & Roy Beddard

"Our season was, like everyone else's, badly affected by the rainy summer, and the weather was so bad we missed a few walks. The number of almost every species was lower than previous years. The Marbled Whites were barely affected, the peak count of 21 was just a couple short of the record. This year they were out for longer and were seen on six transect walks instead of the usual four. Small Skippers were unusually abundant whilst only a handful of Essex Skippers were noted. No Brimstones or White-letter Hairstreaks were seen on the transect but there were several records of the former in early spring and just one of the latter" Andrew Self

Bricket Wood TL 131 009

First walked: 1997 **2007 recorders:** Malcolm Hull & Colin Everett

"Butterflies have benefited enormously from the habitat management works carried out in 2002, particularly the creation of the main ride. The number of butterflies recorded in 2007 was 1052, about average for the period since 1997 when recording began. However it was the lowest total recorded in any year since 2002. Species that had a good year in 2007 included the Brimstone and Peacock. The Ringlet, which first colonised in 2002, recorded a total of 137 individuals, easily its highest ever. Silver-washed Fritillary was recorded twice on the transect and there were around a dozen sightings at other times on the Common. White Admiral suffered a substantial drop in numbers – only six were seen, less than a quarter of 2006's total. Purple Hairstreak recorded a total of only 6 – one tenth of the total of 2006." Malcolm Hull.

Bunkers Park TL 079 058

First walked: 1999 **2007 recorder:** Michael Pearson

Colney Heath Common TL 203 057

First walked: 1992 **2007 recorder:** John Moss

"Although a disappointing year in some ways, total numbers of butterflies were 25% up on 2006, with 19 species recorded. Whites and Meadow Browns were well up on 2006, but there were no Orange Tips again, and the decline in Gatekeepers and Small Tortoiseshells continues. Management remains mainly regular mowing of grassland and margins, including former areas of scrub, bramble and thistles. However, the main flowery meadow was left until August, allowing some nectar and foodplants to flower and set seed" – John Moss

Danesbury Park TL 230 170

First walked: 1996 **2007 recorder:** Pat Watt & Ken King

"2007 was a disastrous year; the total number of butterflies seen was the lowest since I started recording here in 1998. This year I recorded only 379 Butterflies compared with 928 in 2006. My best year was 1999 when I recorded 2002 Butterflies; this year's total was only 19% of that.

For several weeks the weather was not ideal and might have contributed to the low numbers.

The two most abundant species are always Gatekeepers and Meadow Brown; their numbers had more than halved from last year. I will always remember the clouds of Meadow Browns that went up when I walked through the grass in 1999 but I have not seen numbers like that for a few years.

The Skippers also had numbers down by over half and sadly I did not see a single Common Blue although I had seen 9 in 2006. However there was some good news: the Whites and Peacocks did fairly well". Pat Watt

Fryent Country Park TQ 195 876

First walked: 1986 **2007 recorders:** Leslic Williams, Michael Berthoud & Simon Mercer

"The poor weather conditions affected a number of the weekly walks, while the indices for many species were low. For the first year since the transect commenced in 1986, no Small Tortoiseshells were recorded. The count for the Meadow Brown was the lowest since the transect commenced, in part possibly due to the management of the meadows which have been flail-cut only for about three years, rather than having had the hay harvested. Improvements to the management of the meadows is being investigated, while the hedgerow restoration programme has continued including the planting of Alder Buckthorn" Leslie Williams

Gunnersbury Triangle TQ 201 786

First walked: 1999 **2007 recorders:** Andy Brown, Adam Sparrow & B.Stagg

Gutteridge Wood TQ 091 843

First walked: 1990 **2007 recorder:** Ann Rix

"Total numbers of butterflies seen in the first half of the recording year were closely comparable to 2006 although the weather was unsuitable for counting in weeks 6 and 9. The second half of the year saw a fall in numbers with dull, cool weather persisting, leaving the total for the year down by 30%. Skippers and Common Blues were scarce but Peacocks did well and Comma numbers were stable. By September only Speckled Woods, now the commonest species here, were seen." Ann Rix

Hampstead Heath TQ 264 870

First walked: 1978 **2007 recorders:** Adrian Brooker, Bob Gillam, Richard Payne, R.Renwick

Horsenden Hill East & Horsenden Hill West TQ 163 844

First walked: 2003 **2007 recorders:** David Howden & Andy Culshaw

"In many ways 2007 was a poor year for butterflies due to a wet summer. Small Tortoiseshell seemed to do particularly badly, managing to miss both transects. But Horsenden's star species - White-letter Hairstreak - made an unusually early showing and Marbled Whites continued their trend by becoming more numerous. Even better, we managed to get the second record of recent times for Ringlet and the first record ever of Brown Argus, which may now be breeding on site. So a poor year and yet also a very good one." David Howdon

Hunsden Mead TL 416 108

First walked: 2006 **2007 recorder:** Ellie Minns

Kenwood TQ 271 874

First walked: 2005 **2007 recorder:** Mike Taylor

"The year began well and following the warmest April since records began we had a lot of early flyers, leading to an annual total of 4 Orange Tips & 17 Holly Blues – the highest numbers in three years of recording at Kenwood. However, we experienced prolonged poor weather in May, June & July and it was sometimes difficult to find a recording 'window'. Three times we had no choice but to record in sub-optimal conditions – in high winds. Unsurprisingly therefore, numbers are significantly down: 497 compared to 606 in 2006 (although this drop is in part due to the absence of Painted Lady this year, compared to 30 in 2006). The species to show by far the most significant reduction is Small Skipper: 5, compared to 44 in 2006. The good news is that we continue to have a significant Small Copper population in and about a SSSI sphagnum bog that has held strong this year - 20 compared to 23 in 2006. The bog is in acid grassland with abundant Sheep's Sorrel, which is cut once a year in late summer with some areas left uncut for 2 years on rotation to encourage structural diversity including ant-hills". Mike Taylor

Kings Langley TL 068 039

First walked: 1997 **2007 recorder:** Violet Chandler

"The significant drop in the species count (15) is probably due to the poor weather when compared to last year's (20). This year's highlight was a rather special sighting of a Purple Emperor on July 3rd, the first ever seen in the garden". David Chandler.

Knebworth Park TL 221 208

First walked: 1996 **2007 recorder:** Ken B. King

"Not a good year – but interesting for the Small Coppers that appeared in the wrong places at unusual times!" – Ken King.

Lemsford Springs TL 223 121

First walked: 1998 **2007 recorder:** Neale Holmes-Smith

"The butterflies as I am sure others have experienced have had a tough year on both my sites. Let's hope they can recover next year." – Neale Holmes-Smith

Mardley Heath TL 248 184

First walked: 2006 **2007 recorders:** Caroline Phillips & Sue Stephens

"It was the second year of this transect, with much fewer overall sightings than 2006 due to poor weather conditions. Most conspicuous difference was a complete lack of Painted Ladies. Gatekeepers and Meadow Browns were also down significantly. One sighting of a Purple Hairstreak on the ground after a stormy few days gives us hope of seeing more in 2008. Part of Welwyn Hatfield Council's management of Mardley Heath is to broaden existing woodland rides and create glades, which should encourage more butterflies". Caroline Phillips and Sue Stephens

Marshalls Heath TL 161 149

First walked: 1989 **2007 recorders:** John Murray & Trevor Chapman

"There was a change in management this year consequent upon the election of a new chair of the footpaths & commons committee on the Parish Council, and no summer cut was carried out on the west side. The resultant rank grasses may have been responsible for the loss of Brown Argus and the lamentably low total of 2 Common Blue. No Small Tortoiseshells were seen either. However, it may also have caused the tripling of Ringlet numbers to 41, though Marbled White, which also should have benefited, dropped from 6 to 1. Four White-letter Hairstreak were seen, the first since 2005, and Large and Small Whites both increased. A strange arrival was the Mediterranean orange form of the Speckled Wood photographed by Stuart Ball on 24th July, described under the species accounts." - John Murray

Millhoppers SP 900 149

First walked: 1998 **2007 recorder:** Margaret Noakes

Miswell Lane SP 914 117

First walked: 1999 **2007 recorder:** Brian Jessop

"April showed a marked increase in species and numbers, then it went downhill except for week 19. Brimstone did better this year, but that's the only good news on this walk. The farmer cut the hedgerows as the Gatekeepers were emerging, so that probably accounts for the large drop in numbers of them and Speckled Wood. 2 species less than last year, and 50% less in numbers!" – Brian Jessop.

Northaw Great Wood TL 280 040 & Northaw Great Wood Bridleway TL 285 043

First walked: 1999 **2007 recorder:** Jane Worroll

"No changes to habitat structure along the transect – we continue to rough-cut middle way ride in September-October. Elsewhere in this wood we have restored another glade and opened a ride linking this glade with another on Justice Hill". Christine James

Oughtonhead Common TL 169 303

First walked: 2002 **2007 recorder:** Phil Lumley

Patmore Heath TL 443 257

First walked: 1996 **2007 recorder:** Gavin Vicary

"In the twelve years that I have carried out the transect at Patmore Heath, this was the lowest total butterfly count that I have obtained during a single year, probably caused by the poor weather. No Holly Blues or Clouded Yellows were seen in 2007 but these should come back in the future. All of the important species associated with the reserve such as Small Copper, Small Heath, Brown Argus and Ringlet were

recorded. Patmore Heath is probably the best remnant left of acid grass heaths; there had however been a decline here and lack of grazing had meant that large parts of the reserve were turning to woodland. Herts & Middx Wildlife trust have reintroduced grazing, along with removal of selected areas of scrub and some trees. The results are clearly evident as the loss of grassland due to shading and nutrient enrichment has been reversed, with many of the rare grasses and heathland plants starting to dominate once again. This is good news for the Small Coppers for which Patmore Heath is one of the best sites in Herts & Middx. The caterpillar's foodplant, Sheep's Sorrel, is very common on acid grass heathland and it was one of the plants that was being lost." Gavin Vicary

Perivale Wood TQ 159 837

First walked: 2005 **2007 recorder:** David Howdon
See Horsenden Hill

Pryor's Wood TL 265 265

First walked: 2000 **2007 recorder:** Andy Holtham

Railway Fields TQ 317 881

First walked: 1997 **2007 recorders:** David Bevan, Catherine Price and Rebecca Turpin
"Catherine Price and Rebecca Turpin did brilliantly - and we managed another "full house". It was of course a dismal butterfly season, producing our lowest total butterfly numbers (267) since I started the transect in 1997. Meadow Browns (13 records) had their worst year yet, and we saw no Orange Tips at all, though numbers have always been very low, with a maximum of only 5 in 2001. There were no Skippers either, nor Common Blues. Speckled Wood and Gatekeeper (our two commonest butterflies) did comparatively well, but numbers were still well down on recent years. Holly Blue was the only butterfly to show a modest increase over the last couple of years. The only real highlight was the appearance of a single Marbled White on July 13th - a new butterfly for Railway Fields, which lies 2 km S.E. of Alexandra Park, where the butterfly was seen for the first time in 2004. Railway embankments link the two sites. We have now recorded a grand total of 22 species during the 11 years of the transect." -David Bevan

Reddings TL 230 135

First walked: 2001 **2007 recorder:** G. Pearman-Jenkins
"Volunteers have done a lot of coppicing and removal of sycamore on sections 1,2 & 5, so we hope this will let a lot more sunshine into this area" - Chris James.

Regents Canal TQ 356 830

First walked: 2001 **2007 recorder:** Donald Rooum

Rothamsted Farm TL 121 137

First walked: 1991 **2007 recorders:** John Bater & Phil Gould

Sherrards Park Woods TL 230 139

First walked: 1999 **2007 recorder:** Gwyneth Pearman-Jenkins

Shrubhill Common TL 036 072

First walked: 2001 **2007 recorder:** Roger N. Prue
"This was by far the poorest year for numbers since I started recording in 2001, but I did record 21 species. There were fairly good numbers of Brimstones, Small & Green-veined Whites, Orange Tips, Holly Blues, Peacocks and Speckled Woods, but numbers of the other species were mainly well below those of previous years. Only one Large Skipper was recorded compared to 14 last year. Most worrying was the almost complete absence of Small Tortoiseshells: I saw only one specimen compared with 34 in 2006 and 110 in 2004". -Roger Prue.

Stevenage TL 246 234

First walked: 1993 **2007 recorder:** Peter J. Clarke

Templewood Vale TL 235 143

First walked: 1998 **2007 recorder:** Neale Holmes-Smith

See Neale Holmes-Smith's notes for Lemsford Springs.

Therfield Heath TL 348 401, TL333395, TL333396, TL353404 & TL349398 (5 transects)

First walked: 1988 **2007 recorder:** Alan J. Beale

"Chalkhill Blue were down again this year for the same reason as 2005 (over-grazing by sheep). Hopefully Natural England will put it right in time" – Alan Beale

The Warren TL 204 053

First walked: 1991 **2007 recorder:** John Moss

"A disappointing year, although the total number of butterflies was up on 2006. The highlight was an irruption of Marbled Whites, suggesting the appearance of a breeding colony in an area with a tall sward of diverse grasses. All Whites were well up on previous years, but the downward trend in Small Heaths continued and there were few Common Blues. Management was mainly limited to occasional mowing of boundary rides and some nettle beds". – John Moss

Ware Park TL 347 143

First walked: 1996 **2007 recorder:** Andrew Wood

"More cattle were kept in the park this year, and fields bordering both sides of section 8 are now pasture, although a hay cut was made on the field on the southern side early in the summer. The field south of section 7 was seeded with Lucerne and cut twice before it too was grazed in the autumn. Work on restoring Ware Park Mill involved complete clearing of undergrowth around it and on the river side of section 12, including several buddleias. Overall numbers were down about 30%; in no week were more than 100 butterflies seen compared with 3 centuries in 2006. Large Skipper, Small White and Ringlet were the only species not to show a decrease. However, White-letter Hairstreak, Marbled White and Small Heath were all recorded after gaps of several years. Both of 2006's re-colonisers, Brown Argus and Common Blue, were again in evidence, so the total number of species was up from 20 to 23." Andrew Wood, (from Wood 2007b)

Waterford Heath North TL 317 154

First walked: 2000 **2007 recorder:** Janet Holmes

Wood Lane Pirton TL 140 310

First walked: 2005 **2007 recorder:** Val Fullforth

"The obvious reason for the decline in the larger migrant species appears to be the deluges we had during 2007, and particularly lower temperatures in August" Val Fullforth

Annual totals

The table below summarises the results of each of the transects above except those which were walked too few times for totals to be meaningful. It gives the sum of the weekly totals for each species for the entire year, corrected for any gaps in the record. Figures in *italics* indicate poor coverage, and where coverage is too poor or non-existent for a particular species, a question mark has been entered. The weekly transect data is also used in the species accounts later on, where it is presented as an abundance graph for the season.

	Aldbury Vowens	Balls Wood	Beane Hill	Bishops Stortford Southern County park	Brent Reservoir	Bricket Wood	Bunkers Park	Cobley Heath	Danebury	Fryett Country Park	Gunnery Triangle	Gutteridge Wood	Hamstead Heath	Hornden Hill east	Hornden Hill West	Hundon Mead	Kenwood	Kings Langley	Knebworth	Lensford Springs	Marley Heath	Marshalls Heath	Milthorpe	Miswell Lane	Northaw Great Wood	
Small Skipper	58	23	3	29	98	60	65	0	0	1	0	0	0	51	4	0	7	0	48	0	0	74	26	0	0	
Essex Skipper	58	0	0	55	6	0	0	0	0	0	0	0	0	25	0	0	13	0	138	0	0	25	1	0	0	
Small Essex Skipper	0	0	0	0	0	0	0	21	0	9	3	26	3	0	0	0	0	0	0	1	2	0	0	0	10	
Large Skipper	23	0	2	20	0	39	57	1	3	3	0	8	0	15	9	5	17	0	5	0	0	2	28	2	0	
Dingy Skipper	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grizzled Skipper	1	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brimstone	163	3	11	6	0	85	3	0	1	6	13	7	23	3	3	2	20	4	10	1	5	8	29	35	0	
Large White	17	9	5	39	26	44	12	28	14	6	0	8	9	7	7	27	4	21	43	27	10	18	20	15	1	
Small White	55	11	31	158	27	6	89	70	26	56	42	0	33	24	42	31	0	38	36	3	53	62	12	49	0	
Green-veined White	36	69	8	11	68	68	53	0	9	16	24	23	7	26	31	0	0	4	130	77	27	44	65	25	6	
Orange Tip	15	10	9	4	2	6	22	0	1	9	5	1	1	9	3	5	6	1	18	41	8	10	10	8	0	
Green Hairstreak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Purple Hairstreak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
White-letter Hairstreak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Small Copper	22	0	0	1	5	1	6	3	5	0	0	0	0	7	31	42	66	20	0	30	0	1	2	1	2	
Small Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brown Argus	29	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Common Blue	28	0	0	26	15	0	81	10	0	1	0	3	0	2	0	25	0	1	2	2	0	2	0	0	0	
Chalcid Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Holly Blue	4	1	3	3	11	11	20	1	6	4	56	7	11	9	13	0	21	5	10	0	3	29	1	4	0	
White Admiral	0	11	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Purple Emperor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Red Admiral	18	13	3	6	14	19	6	3	8	4	7	3	22	9	8	14	5	16	30	12	13	11	12	23	2	
Painted Lady	5	1	1	16	1	3	4	4	2	0	1	1	1	1	1	2	0	0	0	0	0	4	2	0	3	
Small Tortoiseshell	12	0	0	15	0	3	8	7	9	2	0	1	0	0	0	0	0	2	4	19	4	0	0	0	0	
Peacock	89	72	27	87	12	77	97	8	11	41	4	24	14	19	32	9	8	13	89	29	56	15	10	33	8	
Comma	10	32	6	0	14	17	5	4	11	6	13	13	8	15	10	3	4	2	8	18	17	11	15	14	3	
Dark Green Fritillary	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Silver Washed Fritillary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Speckled Wood	8	188	133	2	46	55	16	16	27	64	61	184	50	68	17	2	45	1	24	8	13	98	48	93	6	
Wall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Marbled White	413	0	0	1	55	38	59	3	15	0	0	0	0	0	0	0	0	0	52	0	0	1	2	11	2	
Catkins	157	63	64	221	339	137	109	35	92	110	39	65	48	142	180	2	71	11	302	18	59	180	48	79	51	
Meadow Brown	566	149	29	250	317	179	723	322	141	270	5	92	76	197	826	409	231	21	1120	18	87	388	238	82	74	
Small Heath	69	0	0	2	0	0	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ringlet	126	489	0	50	0	131	0	0	8	0	0	0	0	0	0	0	0	121	9	63	41	76	22	63		
Total butterflies:	1986	1190	335	1014	1067	990	1434	549	388	597	239	467	305	674	1240	598	489	143	2238	265	423	1028	640	516	230	
Number of Species	26	17	15	22	18	22	19	18	19	15	14	16	15	20	20	13	16	15	22	15	16	22	19	16	13	
	Northaw Bridleway Great Wood Bridleway	Oughtonhead	Patmore Heath	Patmore Wood	Pyons Wood	Railway Fields	Regents Canal	Rothenham Farm	Sherrards Park (Readings)	Strubhill Common	Stevage	Templewood Vale	The Warren	Therfield Heath Base of Church Hill	Therfield Heath Church Hill	Therfield Heath Lankaster Hill	Therfield Heath Rifle Range	Therfield Heath Top of Rifle Range	Tower Hamlets Cemetery Park	Ting Park	Ware Park	Waterford Heath North	Wood Lane Prison	TOTAL NUMBERS 2007	MEAN NUMBERS 2007	
Small Skipper	0	9	54	2	4	0	0	0	0	27	79	0	0	0	0	44	8	9	14	47	14	2	8	867	27	
Essex Skipper	0	52	1	2	6	0	0	0	0	30	38	0	0	0	0	8	0	0	49	94	15	0	0	514	18	
Small Essex Skipper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156	8	
Large Skipper	0	8	4	0	4	0	0	2	0	1	70	0	2	2	0	4	0	0	56	21	13	0	14	503	30	
Dingy Skipper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	
Grizzled Skipper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	
Clouded Yellow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
Brimstone	0	134	6	5	1	1	0	2	2	14	2	0	0	7	0	4	2	14	80	42	3	6	166	929	39	
Large White	4	14	38	10	15	12	1	40	11	23	21	0	54	11	4	55	4	25	208	23	18	59	171	1232	45	
Small White	17	9	125	34	4	29	162	86	12	63	52	2	45	46	20	125	20	72	423	66	47	56	132	2585	44	
Green-veined White	0	104	118	31	0	0	0	4	40	68	32	14	54	16	0	2	0	14	427	39	46	9	18	1855	38	
Orange Tip	0	25	2	16	2	0	0	3	11	22	10	13	1	5	0	1	0	1	36	12	10	1	50	420	40	
Green Hairstreak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Purple Hairstreak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
White-letter Hairstreak	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	5	
Small Copper	0	0	27	11	0	0	0	0	0	2	0	0	13	0	0	0	0	0	1	2	0	0	0	290	22	
Small Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brown Argus	0	0	6	0	0	0	0	0	0	0	0	0	0	23	6	1	1	7	0	3	1	0	0	99	11	
Common Blue	0	6	4	18	0	0	1	0	0	10	2	1	21	9	2	3	5	38	24	19	2	6	0	364	31	
Chalcid Blue	0	0	0	0	0	0	0	0	0	0	0	0	0	12	14	20	83	184	0	0	0	0	1	264	5	
Holly Blue	0	12	0	18	0	13	1	4	4	23	2	3	0	0	0	0	9	0	214	0	8	0	0	7	550	35
White Admiral	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	4	
Purple Emperor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Red Admiral	0	22	39	10	3	6	0	16	2	3	8	4	8	1	1	0	2	0	83	26	60	14	18	607	43	
Painted Lady	1	9	1	2	1	0	0	2	0	2	0	1	2	0	1	0	1	2	5	8	4	5	4	101	34	
Small Tortoiseshell	2	4	9	0	1	0	17	0	1	0	1	17	0	1	8	0	0	0	0	0	0	0	0	199	26	
Peacock	7	33	21	33	27	1	0	23	8	55	29	20	39	13	1	4	0	4	103	15	11	72	1413	45		
Comma	3	35	9	12	8	4	0	1	5	13	10	4														

Regional Indices

compiled by Leslie Williams

This index uses transect data from eight long-running transects (four in Hertfordshire and four in Middlesex, though the index has been depleted by the loss of two of the Hertfordshire transects). The transects are Hampstead Heath 1978-2007, Frynt Country Park 1986-2007, Beane Hill 1988-2007, Gutteridge Wood 1990-2007, Gobions Woodland 1990-2001, South Mimms 1990-2000, Aldbury Nowers 1992-2000 and 2002-2007, and Marshall's Heath 1992-2007. The indices are set at 100 in 1990, or the first year of record for a species. Note that for any one species the indices are relative from year to year, not from species to species. The indices are more useful when looking at longer terms trends than for year to year changes. Similarly, indices may be less reliable for localized and less frequent species.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Species																						
Small & Essex Skippers	52	82	128	118	100	227	199	97	114	127	254	236	74	102	67	111	90	121	141	92	113	62
Large Skipper	53	124	63	204	100	58	201	161	180	140	91	80	54	77	50	77	138	161	77	89	80	37
Dingy Skipper					100	0	0	100	150	0	0	200	0	0	100	NA	150	0	600	0	700	300
Grizzled Skipper								100	75	0	0	200	0	75	100	NA	0	250	150	300	150	50
Clouded Yellow											100	0	20	0	420	0	30	0	0	0	0	0
Brimstone					100	183	317	294	268	155	224	243	324	297	475	243	237	166	321	332	165	333
Large White	144	39	142	322	100	62	427	107	107	68	16	97	156	53	69	56	76	64	88	67	88	38
Small White	574	123	173	251	100	220	427	120	350	406	227	550	220	113	163	228	241	178	376	211	233	275
Green-veined White	64	33	140	162	100	55	250	72	101	96	66	178	258	67	63	73	172	82	168	115	74	71
Orange Tip	2	18	10	35	100	70	90	90	47	77	43	93	84	46	78	58	58	41	122	81	32	40
Green Hairstreak						100	144	310	166	77	310	266	144	116	NA	77	17	6	28	6	0	0
Purple Hairstreak						100	120	40	60	310	150	300	475	205	80	65	65	130	70	40	80	80
White-letter Hairstreak						100	100	50	50	700	400	500	150	175	481	0		0	0	150	0	200
Small Copper	3	18	9	52	100	40	15	3	11	15	36	32	11	4	3	2	1	12	40	15	38	16
Small Blue						100	0	0	0	0	0	0	0	0	0	NA	0	0	0	0	0	0
Brown Argus						100	32	118	373	548	468	127	289	570	NA	76	62	213	378	683	92	92
Common Blue	8	8	0	54	100	48	41	20	41	39	35	49	15	26	14	10	5	15	17	27	32	4
Chalkhill Blue												100	0	0	0	0	0	0	100	300	800	0
Holly Blue	0	0	0	105	100	12	1	0	0	4	26	3	6	2	1	4	6	1	7	4	3	8
Duke of Burgundy						100	20	80	20	0	0	0	0	0	0	NA	0	0	0	0	0	0
White Admiral													100	100	0	0	0	0	0	0	0	0
Red Admiral	0	0	100	25	100	90	179	101	63	190	164	85	111	81	191	89	142	140	64	102	173	275
Painted Lady	0	0	100	0	100	17	25	0	17	11	655	8	20	9	31	0	101	208	70	0	187	47
Small Tortoiseshell	239	344	460	256	100	150	761	206	93	187	273	475	137	102	21	23	10	16	36	12	8	8
Peacock	130	191	160	120	100	130	372	249	147	196	329	245	384	328	409	214	192	93	155	192	191	280
Comma	79	134	140	185	100	142	365	124	145	224	196	188	169	152	185	135	127	187	187	128	214	112
Dark Green Fritillary						100	0	0	0	100	0	0	0	0	NA	0		0	100	100	0	700
Silver Washed Fritillary																					100	0
Speckled Wood	0	18	59	139	100	117	208	236	363	212	116	204	259	277	298	222	299	312	194	170	193	193
Wall Brown	27	21	0	89	100	21	9	4	8	3	2	0	0	1	0	0	0	0	0	0	0	0
Marbled White						100	151	211	136	91	99	174	308	387	NA	120	81	306	196	493	331	331
Gatekeeper	0	0	0	0	100	87	71	38	58	61	69	63	55	66	68	72	56	49	96	86	88	51
Meadow Brown	32	110	158	162	100	193	101	48	74	88	121	117	137	131	120	55	42	120	80	97	88	37
Small Heath	42	57	11	37	100	59	30	9	8	2	15	33	20	9	5	NA	7	1.7	10	24	22	12
Ringlet					4	0	100	271	419	138	49	96	96	170	246	NA	194	183	278	272	293	252

Species Mapping

Area covered by the survey

A map of the boundaries of our survey area is shown on the inside back cover (bottomright). For Hertfordshire we are using the present County boundaries as the limits of our survey, whereas for Middlesex, we use the old Watsonian Vice County boundaries. This includes most of Central London north of the Thames, the River Lea forming the easterly boundary, so that places such as Stepney, Westminster and Fulham are all within the survey area, as are Sunbury, Staines and Heathrow in the west.

Built-up areas cover more than 10% of Hertfordshire, and about 70% of Middlesex; these are shown as stippled areas in the map on the inside back cover. Such areas obviously provide few possibilities for butterflies to breed, but much of the rest of the area is covered by arable farmland where modern techniques, particularly spraying with insecticide and weedkiller, also restrict butterfly breeding. Nature reserves where butterfly breeding is encouraged constitute less than 1% of the total area, so most butterflies recorded in this report will be surviving wherever they can on untended scraps of land, woodland edges and those road verges left uncut in the summer months. A total of 594 *tetrads* (a *tetrad* is a 2 x 2 km square, its borders being the even-numbered kilometre lines of the National Grid shown on Ordnance Survey maps) lie within the survey area, or have more than half of their area within it. 414 of these lie in Hertfordshire, and 180 in Middlesex.

Observer coverage

Tetrad squares recorded

Observations have been received from 320 tetrads in 2007, or 54% of the total. This year we are showing maps of records for 2005-2007. The number of visits to each tetrad in 2005-2007 are shown in the map at the **top left, inside back cover**. When using the species distribution maps later, comparison with this map will give some idea as to how any recorder bias affects apparent distribution. The number of species recorded in each tetrad in 2005-2007 is shown in the map at **top right, inside back cover**.

Butterflies of 2007

The following sections are species by species accounts of butterflies seen (or in some cases not seen) in Hertfordshire and Middlesex during 2007. Each species is headed by a distribution map of the tetrads in which it was recorded, a flight diagram, dates of first and last sightings, and various values indicating how well the butterfly fared in 2007.

The **numbers on the maps** indicate the maximum number of butterflies seen in each tetrad by one observer at any one visit throughout the year. Thus if an observer sees, for example, 25 Small Skippers on one morning and returns to find 25 the same afternoon, or the following week in the same tetrad, then 25 is the value recorded for that square, provided no one else sees a higher total at other times during the year. A few observers gave lists of butterflies for given sites without any indication of numbers seen. In such cases one sighting only is logged for that square, which is usually far too small. Please try and note numbers of butterflies seen, and other information as indicated on the branch recording sheets, which can be downloaded from the website at: <http://www.hertsmiddx-butterflies.org.uk>.

The **Peak date** listed for each species is determined from the transect data only. The date when the highest numbers of a given species were observed on each transect count is averaged. This average has been weighted according to the numbers seen at each transect, so that sites with the highest populations contribute most to the determination of the mean date. If the species is bivoltine or trivoltine, the highest peak on the average curve is selected, and the date of highest numbers for that brood only is averaged. Where numbers are low an overall peak date cannot be sensibly determined, whereas for some species such as the Speckled Wood which have several peaks throughout the year, the highest peak may be quite different from place to place.

The **Maximum number seen** records the greatest number seen in 2007 at one locality at one time out of all records for Hertfordshire or Middlesex. It may represent the number of butterflies seen on one Buddleia bush, for example, or within the confines of a garden or field, or the number seen during a transect walk. If the period of observation takes longer than one hour, however, the hourly rate only is used, and an asterisk* is placed after it.

The **Index of abundance** for a given species is the average of the sum of the weekly totals seen on transect walks where the butterfly has been recorded. The **Change in abundance since 2006** is the percentage change in abundance averaged for those transects for which 2006 data is also available. For example, twice as many butterflies as last year is given as a 100% increase; a quarter of last year's total is a 75% decrease. Again there is much variation from site to site for many species, but the average gives the best overall indication of the general state of that species within the

region as a whole. Note that a comparison of the two years' indices of abundance will not always give the same change in abundance, as some of the 2007 transects on which this figure was based were not walked in 2006. Values in brackets are unreliable due to the small sample.

The **number of tetrads** in which the species was recorded in 2007 is also given, together with the same value expressed as a percentage of those tetrads actually visited by recorders.

Finally, the **Range change since 2006** is given for some species, which compares the percentage of visited tetrads in which the species was found in 2006 and 2007.

New Flight Charts

For this report we have a new way of showing the flight times of each butterfly. Previously we used a chart based on the mean number of butterflies flying each week across all of the transects (These can now be seen in Appendix 1 on page). This meant:

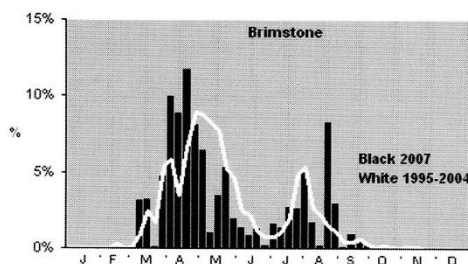
- For less common species the charts were based on very small numbers of butterflies, sometimes too few to produce a meaningful chart.
- Increasingly species are active outside the April to September transect period so flight times were not being completely shown

There is increasing interest in phenology which is the study of recurring natural phenomena and butterfly flight times are a relatively easy way to record an element of this. We now have good data from 1995 onwards and with the changes in weather patterns we think it is a good idea to show not just the current year but also how it compares with an average of the first ten years (1995-2004) of all the records we have. Such comparisons of current year against a past average are a well established way of looking at such phenomena over a period of time.

An example of the new charts is shown below. It shows the percentage of the total number for a species that were flying in each week of the year (y axis). The weeks are a standard measure starting with January 1-7 as week one and going up to week 52 at the end of December (x axis). On the chart these weeks are not shown individually but for readability as months. Some weeks will, of course, straddle two months e.g. week 22 is 28 May to 3 June. The black bars represent 2007 and the white line the mean of data from 1995 to 2004. So what does such a chart tell us?

General interpretation:

- Black bars to the left of the white line show earlier flight than the recent average
- Black bars above the white line show higher % of a species flying at a particular time than the recent average
- Black bars to the right of the white line show later flight than the recent average
- Grey space under the white line shows a lower % of a species flying at a particular time than the recent average



In this example about 10% of all Brimstones were seen in the last week of March with 9% and 12% in the next two weeks going into April. Historically these weeks saw about 5% of the butterflies flying in these same weeks. This shows that the emergence from hibernation was very early and very strong. By May the main flight was largely over. The emergence of the summer brood matched very closely the historical pattern, but at the end of August there was a spike in sightings. We then need to relate this to the weather where we had a warm, early spring, followed by a poor early summer and an improvement around the end of August.

A disadvantage of these charts can be that they may reflect intensive recording on a few sites in a short period or the number of recorders out in the field at a particular time. The August peak above is not seen in the transect records (page 43) as this peak was created by a group of records on the same day at a number of sites visited by one recorder.

Small Skipper *Thymelicus sylvestris*

First seen: 2nd June at Bunkers Park (Michael Pearson)

Last seen: 26th August at Aldbury Nowers (Malcolm Hull)

Peak date: 12th July

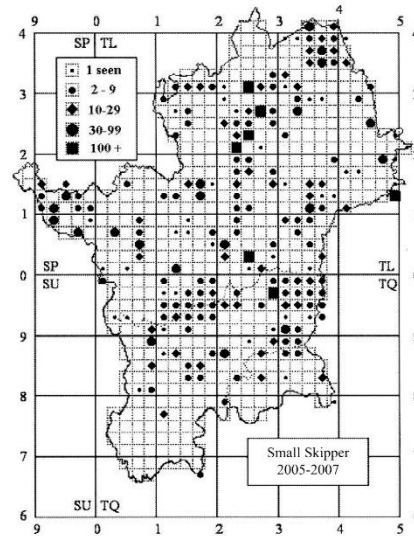
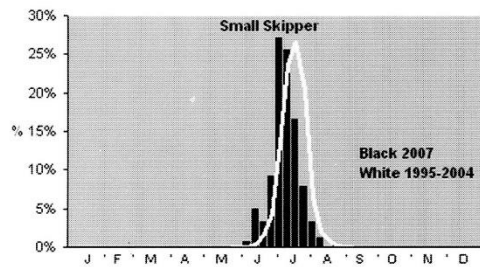
Maximum number seen: 39* at Trent Park on 17th June (Robert Callf)

Mean index of abundance: 32

Change in abundance since 2006: 41% decrease

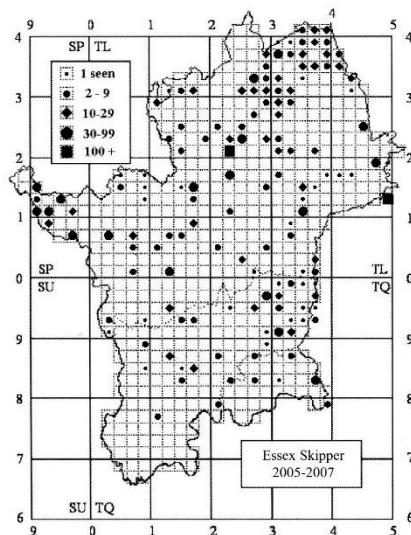
Recorded in: 78 tetrads (25% of those covered)

Range change since 2006: 10% contraction



The butterfly seen by Michael Pearson at Bunkers Park is the earliest ever recorded, the previous record being 3rd June 1999. This is one of the big surprises of the year that we shall see again and again in this report: despite 2007 having the wettest summer on record, and the wettest May since 1983, somehow this has been overshadowed by the warm winter 2006-7, resulting in an earlier emergence and an earlier season. This is not accompanied by a corresponding increase in numbers, however, and Small Skipper has suffered a significant decrease in numbers again, quite dramatic in places: "The species to show by far the most significant reduction is Small Skipper: 5, compared to 44 in 2006" (Mike Taylor at Kenwood). The overall picture is rather up and down, but long term decline:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Knebworth:	467	234	92	196	76	103	107	96	152	459	113	48
Marshalls Heath:	439	284	59	162	81	130	88	213	167	90	111	74
Paimore Heath:	126	101	122	207	200	296	144	91	46	95	65	54
Ware Park:	90	66	39	30	0	5	0	12	10	64	33	14



Essex Skipper *Thymelicus lineola*

First seen: 15th June at Tower Hamlets (Terry Lyle)

Last seen: 17th August at Tring Park (Brian Jessop)

Peak date: 16th July

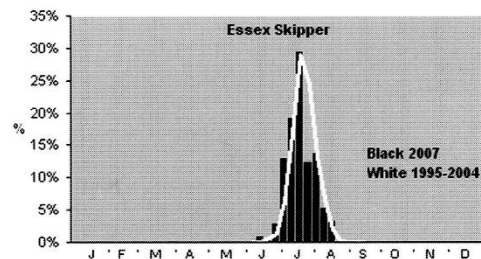
Maximum number seen: 29* at Tring Park on July 14th (Brian Jessop)

Mean index of abundance: 34

Change in abundance since 2006: 41% decrease

Recorded in: 46 tetrads (14% of those covered)

Range change since 2006: 19% contraction



This species seems to be suffering more than the previous species, with yet another fall in numbers and range. These have decreased for the past 6 years, apart from 2004. The emergence was early, though the peak date is only 3 days earlier than average. Many recorders made similar remarks to Andrew Self at Brent: "*Small Skippers were unusually abundant whilst only a handful of Essex Skippers were noted*". At present, Essex Skipper definitely seems to be becoming progressively less common than its close relation the Small Skipper.

Large Skipper *Ochlodes venata*

First seen: 22nd May at Bishops Stortford (Bob Clift)

Last seen: 25th August at Chapel Green (Jill Aberdour)

Peak date: 29th June

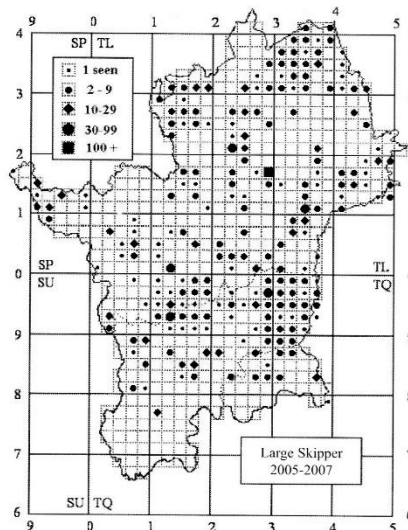
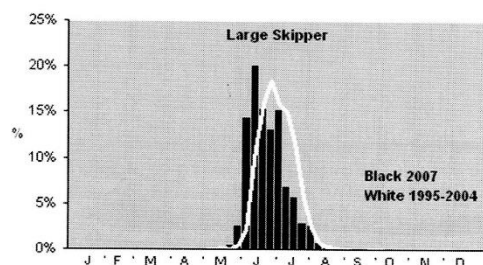
Maximum number seen: 14 at Balls Wood on 17th June (Andrew Wood)

Mean index of abundance: 17

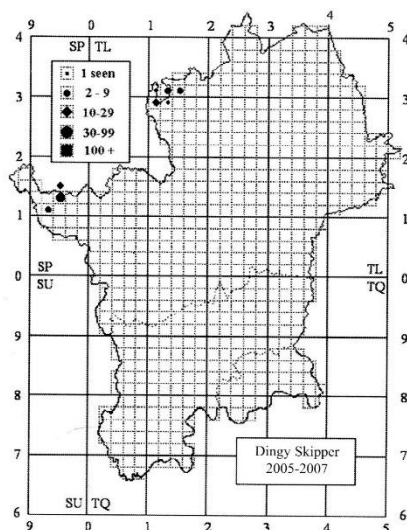
Change in abundance since 2006: 6% decrease

Recorded in: 85 tetrads (27% of those covered)

Range change since 2006: 11% contraction



This species is not declining so fast as the previous two, with relatively modest decreases in recent years. The damp summer may have extended the season: "*A much longer flight period than 2006 extending from June to mid-August. This probably reflects the cooler August conditions.*" (Wood 2007a, writing about Ware Park). The flight chart shows a drop in numbers at the end of June, corresponding to unusually low maximum daytime temperatures down to 14°C and persistently wet conditions.



Dingy Skipper *Erynnis tages*

First seen: 24th April at Aldbury Nowers (Andrew Palmer)

Last seen: 10th June at Aldbury Nowers (Brian Jessop)

Peak date: 1st May

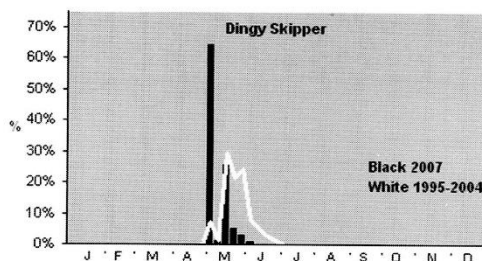
Maximum number seen: 24 at Hexton on 17th May (Liz Goodyear & Andrew Middleton)

Mean index of abundance: 2.5

Change in abundance since 2006: 74% decrease

Recorded in: 8 tetrads (2.5% of those covered)

Range change since 2006: (56% expansion)



"One reliable and startling fact is that the season commenced and finished very early, almost certainly in direct response to the weather. The sighting on 24th April was around a week earlier than any record in the database. At Hexton Chalk Pit twenty-one were recorded on 30th April, a date when the species is usually only just beginning to emerge. By 1st June the flight season was effectively over, save for a late straggler on 10th June. On average you would expect the butterfly to continue flying for another 2 to 3 weeks. Compared to pre-2005 there was a good level of recording, although not consistent across all sites and the largest colony was only visited once on account of restricted access, and so no conclusions as to population status here can be drawn. Elsewhere Aldbury Nowers and Hexton Chalk Pit were both well recorded. At the former, numbers were comparable with 2006, although less were seen during formal transect monitoring, possibly as a result of interrupted access during extensive restoration works. At Hexton, numbers were up significantly, peaking at 24 on 17th May, a week and a half before the usual peak date. On other sites peak numbers were recorded in early May, 3 weeks before the typical peak period, which illustrates what an unusual year it was for this species. Numbers in the Pirton area on private sites were comparable to 2006, but the remaining two sites, Tring Park and Telegraph Hill, continue to cause concern, particularly the former. Numbers at Tring were again precariously low and dramatically reduced on recent years. Habitat condition here has been declining for a number of years, but 2007 witnessed a programme of works aimed at improving condition for Dingy & Grizzled Skippers and it is hoped that the populations remain viable long enough to be able to respond positively. There has been a similar worrying trend at Telegraph Hill but again efforts to improve habitat condition are under way. This site lies within the Pegsdon Hills complex which has strong Dingy Skipper populations and it is hoped that numbers will improve as their habitat is restored. In conclusion the County populations remain vulnerable and whilst largely stable, they have declined very rapidly where habitat is not maintained by suitable management. Uncontrolled scrub invasion appears to be the single most important negative factor. Fortunately almost all of the sites with Dingy Skipper colonies are being managed by sympathetic land managers with whom the branch is working to ensure a positive outlook for the species." - Andrew Palmer, Dingy Skipper Co-ordinator

Grizzled Skipper *Erynnis tages*

First seen: 19th April at Waterford Heath (Kevin & Sandra Standbridge)

Last seen: 22nd May at 5 localities

Peak date: 28th April

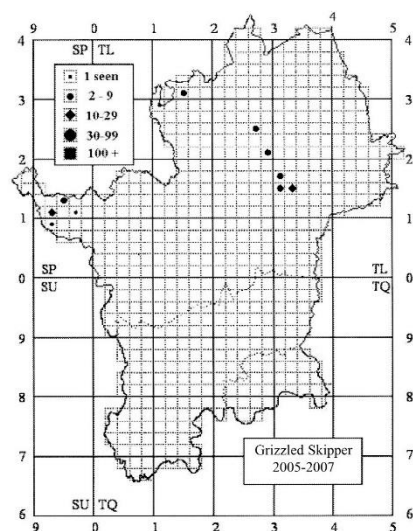
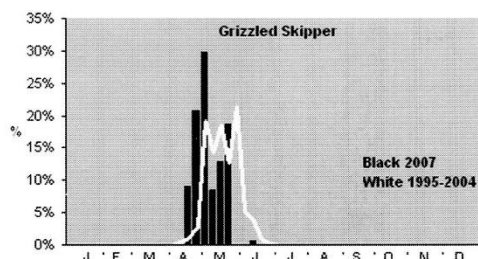
Maximum number seen: 10* at Waterford on 17th May (Andrew Middleton)

Mean index of abundance: 1.5

Change in abundance since 2006: 86% decrease

Recorded in: 9 tetrads (2.8% of those covered)

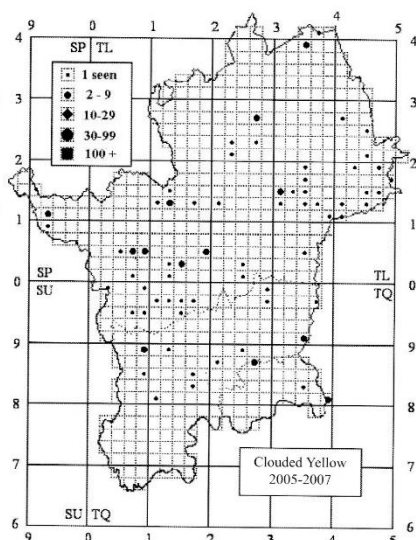
Range change since 2006: 76% expansion



"Grizzled Skipper had a promising year in 2007 with small expansions in the north of the county. It is thought that these are viable expansions rather than singletons being reported which is very encouraging. Major habitat management and restoration projects were completed elsewhere in the county, with the Woodland Trust clearing areas of scrub from the escarpments at Tring Park with the help of contractors and volunteers from Hertfordshire's Countryside Management Service, and a chalk grassland restoration project at Aldbury Nowers was also initiated. It will be very interesting to see how the Grizzled Skipper and other species respond to these projects. Although the populations of this species seem to be stable within the county, Grizzled Skipper has been included as a priority species on the UK Biodiversity Action Plan after undergoing serious declines nationally." - Jez Perkins, Grizzled Skipper Co-ordinator.

All three transects where the species is normally seen had a poor year, particularly following high numbers in the last two years:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Aldbury Nowers:	0	4	0	2	10	?	0	5	3	6	3	1
Tring Park:	0	0	0	0	3	13	9	4	3	40	26	2
Waterford North:					1	4	9	3	3	7	3	0



Clouded Yellow *Colias croceus*

First seen: 2nd August at Harpenden (Michael Healy)

Last seen: 4th October at Enfield (Robin White)

Peak date: 2nd September

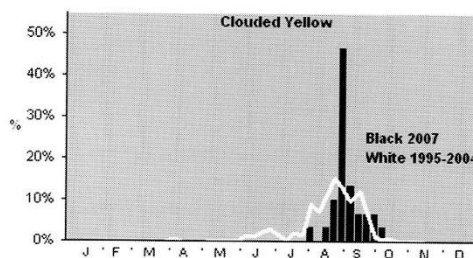
Maximum number seen: 4 at Waterford on 27th August (Darin Stanley)

Mean index of abundance: 1

Change in abundance since 2006: 81% decrease

Recorded in: 14 tetrads (4% of those covered)

Range change since 2006: 64% contraction



This migrant butterfly made a late appearance this year, with no hint of a June immigration like that of the Painted Lady. This may have gone unobserved, for the appearance of Clouded Yellow in August coincides with that of the second generation of the Painted Lady, bred from eggs laid by the June immigrants. They were certainly very much in evidence at Waterford Heath: "This is the place to come if you have not seen Clouded Yellow before. Now up to 4 on site today, mainly showing in the sunshine" (Darin Stanley on September 2nd), and Steve Kiln saw up to 3 there on four occasions between 26th August and 22nd September. They were seen at 3 locations on 2nd September: Waterford Heath as above, Waterend, just outside Wheathampstead (Darin Stanley) and at Watery Grove (Darrel Bryant). Presumably the "Water" prefix to the 3 locations is a coincidence.



Clouded Yellow
Photo: Andrew Wood

Brimstone *Gonepteryx rhamni*

First seen: 1st February at Ware (Ian Edwards)

Last seen: 5th October at Tring (Brian Jessop)

Peak date: 19th April

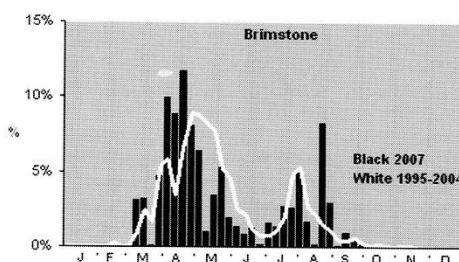
Maximum number seen: 33 at Bricket Wood on 22nd April (Malcolm Hull)

Mean index of abundance: 24

Change in abundance since 2006: 17% increase

Recorded in: 135 tetrads (42% of those covered)

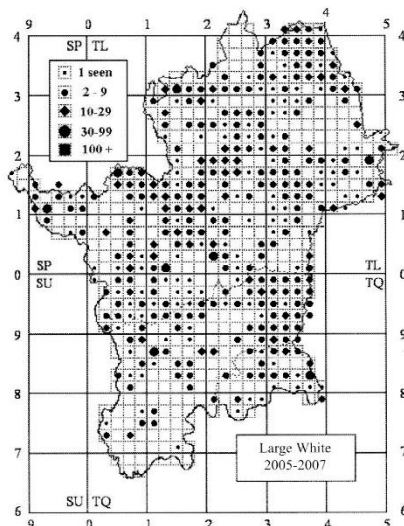
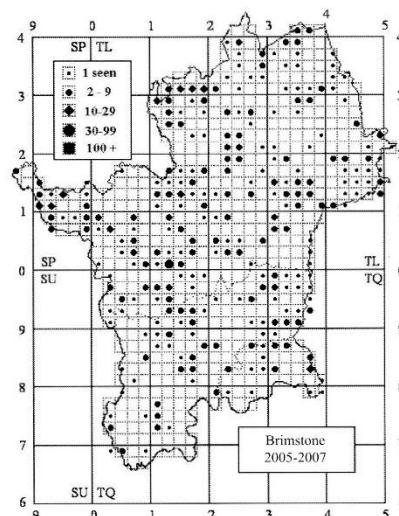
Range change since 2006: 24% expansion



This butterfly peaked earlier than ever this year, and 13 days earlier than average. Presumably this was due to a combination of the unusually warm winter and the very sunny and warm April. Roy Stringer watched a pair preparing to mate on April 2nd at Great Amwell: "Having our lunch in the garden today, we watched a pair of Brimstones doing their courtship for a good half hour. When they had decided on the right variegated ivy leaf, they got down to the serious business. We watched, discreetly of course, for the next half hour then left them to it as we had to go shopping. I have just checked (18h 30m) and the female is still there".



Brimstone
Photo: Andrew Wood



Large White *Pieris brassicae*

First seen: 6th April at Croxley Common (Michael Kings)

Last seen: 11th October at Hatfield (John Moss)

Peak date: 18th July

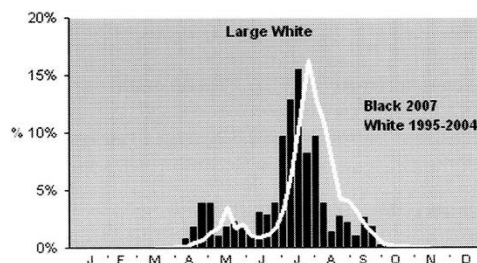
Maximum number seen: 17* at Tower Hamlets on 18th July (Terry Lyle)

Mean index of abundance: 27

Change in abundance since 2006: 28% decrease

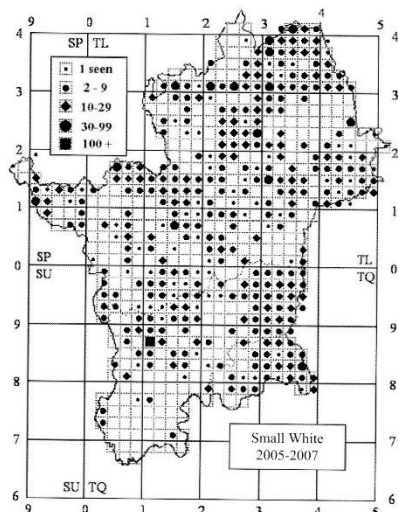
Recorded in: 150 tetrads (48% of those covered)

Range change since 2006: 4% contraction



This species also had an equal earliest (equal with 2006) peak date recorded since the branch began. However, in this case, the peak occurred in the second generation, during a wet, cloudy and cool period, following nearly three months of cloudy wet weather. It seems counter-instinctive to suggest that wet weather results in an earlier emergence, but it may be that the effects of the warm winter and spring would have resulted in early activity and egg-laying for the second generation. Numbers of this species are down, however, so perhaps the poor weather resulted in the deaths of larvae or pupae that were behindhand, truncating the later part of the brood. In the long term, this species has declined again after highs in 1998 and 2003:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Beane Hill:	9	14	53	19	32	16	15	18	17	20	19	5
Colney Heath:	14	15	24	15	20	20	30	50	69	8	12	28
Fryent Country Pk:	2	14	40	9	21	12	15	14	10	30	25	6
Rothamsted:	25	78	92	76	60	31	15	110	57	42	43	40



Small White *Pieris rapae*

First seen: 12th March at Coppetts Wood (Tony Clancy)

Last seen: 17th October at Potters Bar (Jon King)

Peak date: 10th July

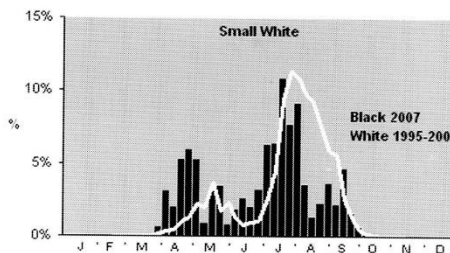
Maximum number seen: 43 at Patmore Heath on July 14th (Gavin Vicary)

Mean index of abundance: 59

Change in abundance since 2006: 13% increase

Recorded in: 167 tetrads (53% of those covered)

Range change since 2006: 3% expansion



"This species seemed to be unaffected or even to have benefited from the warm spring followed by a cool wet summer" (Wood 2007b). The modest increase in numbers and range is one of the few increases this year, and although the early date of first appearance was not the earliest ever, the peak date (which always occurs in the second generation) was a week earlier than ever before, and three and a half weeks earlier than average. So the possibility of truncation of the latter half of the brood suggested as an explanation for the early date for the previous species is not borne out in this case. The distribution map indicates that there are still areas, such as eastern Hertfordshire and rural Middlesex, where more recording is needed for this common butterfly, which is probably present in every tetrad.



Small White

Photo: Andrew Wood

Green-veined White *Pieris napi*

First seen: 17th March at Ickleford (Stuart Pittman)

Last seen: 30th September at Horsenden Hill (David Howdon)

Peak date: 11th July

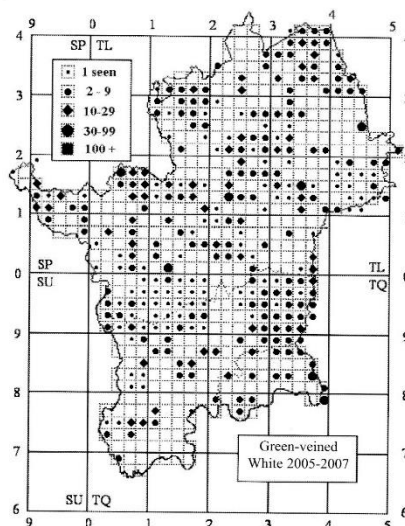
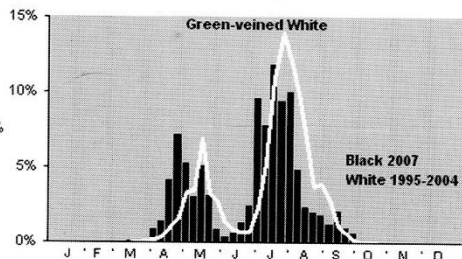
Maximum number seen: 37* at Tower Hamlets on 7th July (Terry Lyle)

Mean index of abundance: 49

Change in abundance since 2006: 30% increase

Recorded in: 136 tetrads (43% of those covered)

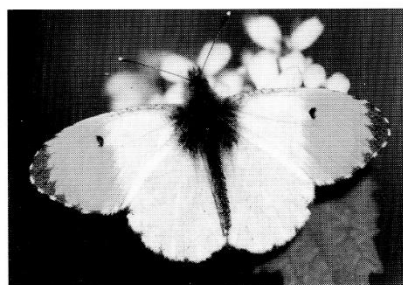
Range change since 2006: 16% expansion



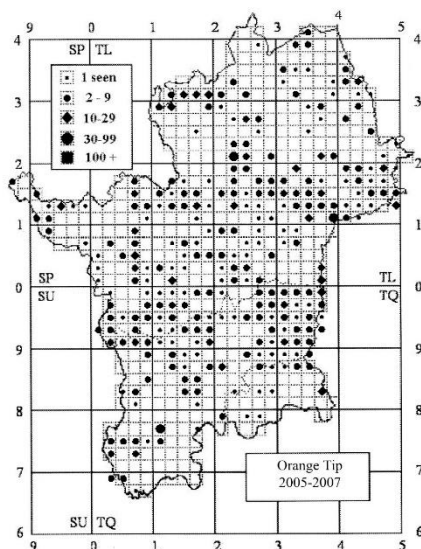
Stuart Pittman's early sighting is the earliest ever by 2 days, the previous record being in 1998, and again the peak date is earlier than recorded before, beating the 2005 peak date by 9 days. Numbers have increased even more than for the Small White, which Andrew Wood attributes to the spring weather: "*The higher numbers in the spring presumably attributable to the warm weather in April and this enabled reasonable success of the summer brood despite the poorer conditions*" (Wood 2007a). So in this case we have a substantial increase peaking at a time when sunshine was about half what would be expected at this time of year, and when it was colder than normal and raining most days. Green-veined Whites normally peak in the last week of July, and in 2007 the highest temperatures of the year occurred in early August in a dry sunny spell, so this is when one might have expected the peak to occur.



Green-veined White
Photo: Andrew Wood



Orange Tip
Photo: Clive Burrows



Orange Tip *Anthocharis cardamines*

First seen: 1st April at Molewood (Andrew Wood)

Last seen: 4th August at Watford (Clive Burrows)

Peak date: 13th April

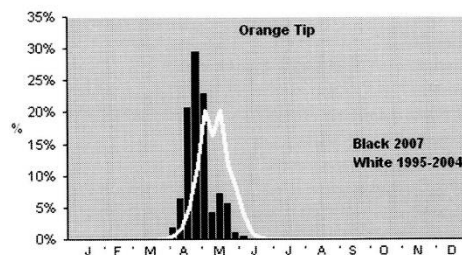
Maximum number seen: 13 at Lemsford on 26th April & 4th May (Neale Holmes-Smith)

Mean index of abundance: 11

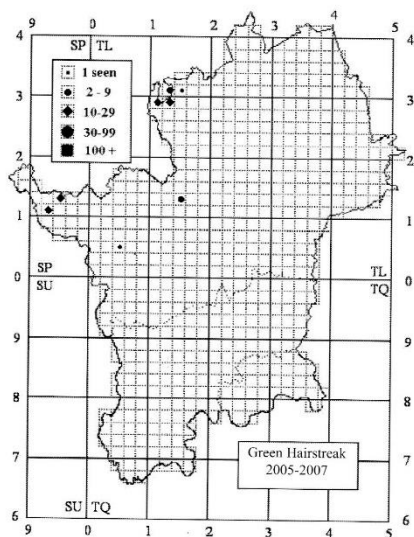
Change in abundance since 2006: 30% decrease

Recorded in: 135 tetrads (42% of those covered)

Range change since 2006: 18% expansion



The 1st April sighting is within 2 days of being the earliest ever, and again the peak in mid-April is nearly four weeks earlier than normal. "There was a noticeable plunge as the warm dry April gave way to the cool wet May, giving a flight period that ended in May rather than well into June" (Wood 2007b). Numbers were down and some transects missed out altogether: "Unusually, no record of Orange Tip", writes John Moss of the Colney Heath transect. Interestingly, on 4th August, Clive Burrows reported "a male Orange Tip at Watford Football Club this afternoon in warm sunshine". Second brood individuals of Orange Tips are very rare, but the very early season would seem to provide the obvious reason as to why one was seen in 2007. This is the first case of a clear second brood individual since 2001, when 3 were seen between July 17th and September 12th, but curiously enough, 2001 was a late season with a cold April and a hot dry summer. However, the weather pattern was similar to (but more extreme than) 1997, when a record early Orange Tip was seen and the peak date was also early, and a second brood individual was seen on August 25th (Murray & Souter 1997)



Green Hairstreak *Callophrys rubi*

First seen: 19th April at Aldbury Nowers (Andrew Palmer)

Last seen: 1st June at Aldbury Nowers (Dave Mackenzie & Andrew Palmer)

Peak date: 20th May

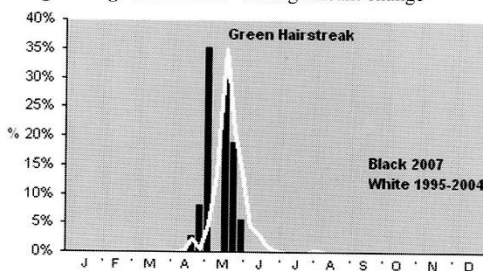
Maximum number seen: 6 at Aldbury Nowers on 20th May (Martin Hicks)

Mean index of abundance: 1

Change in abundance since 2006: (60% decrease, but low numbers)

Recorded in: 5 tetrads (1.6% of those covered)

Range change since 2006: No significant change



"Green Hairstreaks were first seen at Aldbury Nowers on 19th April, at Telegraph Hill and in the Highdown area on 22nd April, at Hexton Chalk Pits on 28th April and last seen at Aldbury Nowers on 1st June. The largest numbers were 5 at Telegraph Hill on 30th April and 6 at Aldbury Nowers on 20th May, where Martin Parr also reported: "Green Hairstreak minimum of 3, possibly 7 as I saw two dog fighting that disappeared over the trees, then 10 minutes and 20 minutes later two more still fighting – so either a long fight or more than one pair". All the locations were on the high chalk of the Chiltern ridge, where we share most of the colonies with immediately adjacent areas in either Bedfordshire or Buckinghamshire. It would be interesting to know if there are any colonies to the east of Hitchin, for example on Therfield Heath. There are, after all, some colonies on the chalk in both Cambridgeshire and Essex." - Nigel Agar, Green Hairstreak Coordinator.

Brown Hairstreak *Thecla betulae* No records of Brown Hairstreak were reported in 2007.

Purple Hairstreak *Quercusia quercus*

First seen: 16th June at Wormwood Scrubs (John Hollingdale)

Last seen: 2nd September at 3 locations

Peak date: 11th July

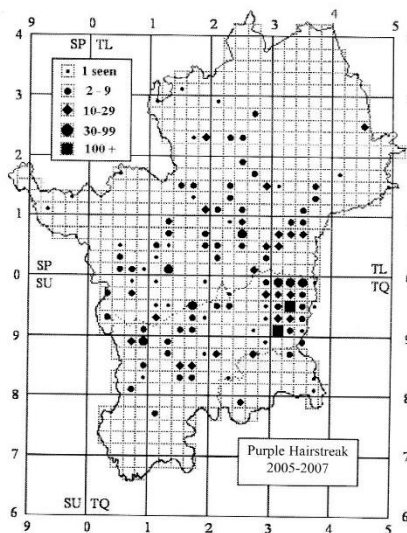
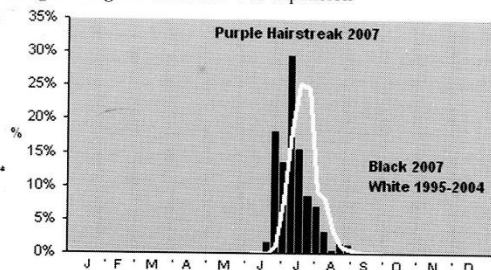
Maximum number seen: 42 at Hilfield Park Reservoir on 12th July (Steve Murray)

Mean index of abundance: 6

Change in abundance since 2006: 49% decrease

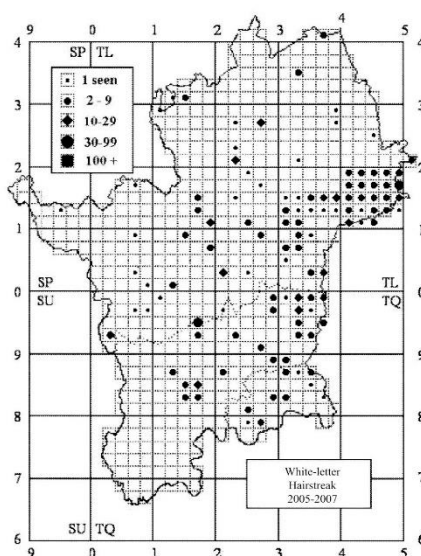
Recorded in: 59 tetrads (19% of those covered)

Range change since 2006: 3% expansion



This butterfly emerged early, and peaked a week earlier than 2006, the previous early peak record, and a fortnight earlier than usual. However it did persist until September 2nd, when at Nomansland Common Darin Stanley saw "One female Purple Hairstreak looking very worn, landed on my phone at one point. Think it wanted to make a call". The same day, Andrew Culshaw wrote "I came across a fairly worn male Purple Hairstreak, which struck me as being on the late-ish side given this year's generally early emergence". Numbers have decreased this year, wiping out last year's increase. The long term picture is one of decline at most sites, particularly following the turn of the millennium:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bricket Wood:		35	49	13	16	8	29	25	31	45	60	6
Colney Heath:	74	29	7	25	26	22	15	32	5	3	0	4
Marshalls Heath:	31	10	27	44	19	8	2	4	9	7	2	6
Patmore Heath:	5	10	2	3	7	5	5	2	6	2	5	3



White-letter Hairstreak *Satyrion w-album*

First seen: 8th June at Ware, Enfield & Crouch End (Liz Goodyear, Andrew Middleton & Tristan Bantock)

Last seen: 1st August at Maple Cross (Ann Piper)

Peak date: 8th July

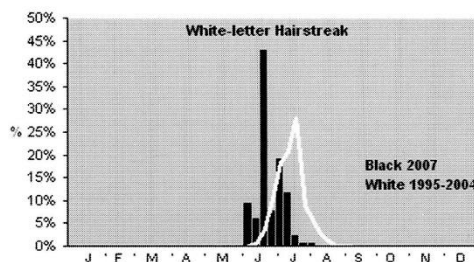
Maximum number seen: 19 at Horsenden Hill on 22nd June (Andrew Culshaw)

Mean index of abundance: 2.5

Change in abundance since 2006: 77% decrease

Recorded in: 37 tetrads (12% of those covered)

Range change since 2006: (33% contraction)



The season was not especially early, but lasted quite a long time, as these two reports, made 7 weeks apart, seem to indicate: "I had a minimum of 8 individuals this afternoon, flitting above the tops of the ashes and a maple, and obtained good views when they landed. Opposite the allotments and adjacent to the Farmer's Market, this glade is the most productive site within the park" (Bob Watts, Alexandra Palace, June 10th). "What might have been White-letter Hairstreaks flying up and challenging passing Holly Blues, but none of the sightings was conclusive. Just as I was about to give up, I got a definite identification of a White-letter Hairstreak, perched on a leaf about 20 feet away (viewed clearly through binoculars) in exactly the same location that I saw my very first, about 45 years ago" (Andrew King on July 29th at Whippendell Woods). Last year, Liz Goodyear and Andrew Middleton initiated a three year national recording project to determine the true distribution of this elusive arboreal species. "Early results indicate that this butterfly, designated a UK Priority Species in 2007, is much more widespread than thought, and relatively common. Techniques were developed from many years and hours of searching for Purple Emperors by watching for male territorial activity, which for the White-letter Hairstreak occurs first thing in the morning as the day warms up. In June several visits were made to London. London Natural History Society journals were able to provide details of known elm trees in the London boroughs and visits were made to Hyde Park, Regents Park, Gibson Square (Islington), Westbourne Green Open Space, Hackney Downs and Millfields Park (Hackney). At all these sites White-letter Hairstreak was recorded. There was some success in searching for eggs and larvae, but finding accessible elm in the home counties is considerably harder than in the rural areas of northern England or Wales where Wych elm is more common and has branches easier to search. For more information about the recording project and how to find White-letter Hairstreak visit <http://www.w-album.hertsmiddx-butterflies.org.uk>" -Liz Goodyear & Andrew Middleton.

Small Copper *Lycaena phlaeas*

First seen: 15th April at Fir & Pond Woods (David Gompertz)

Last seen: 21st October at King George V Reservoir (Andrew Middleton)

Peak date: 4th May

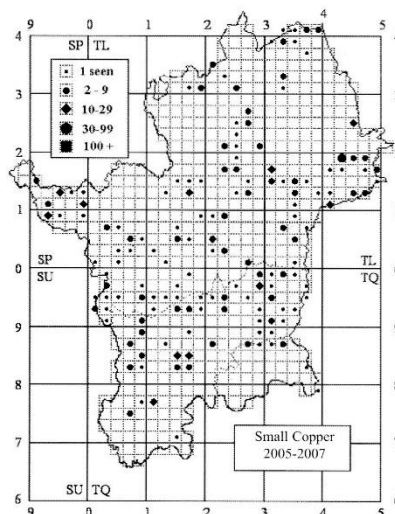
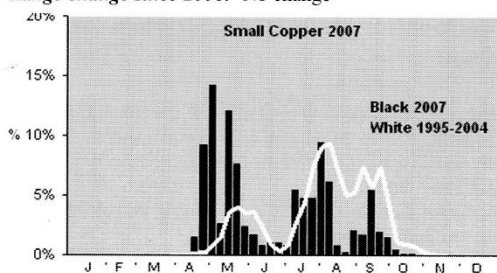
Maximum number seen: 25 at Much Hadham on 24th April (Liz Goodyear) & Andrew Middleton)

Mean index of abundance: 13

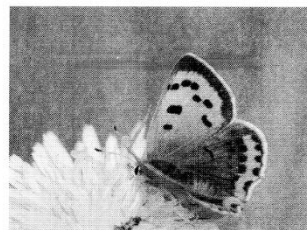
Change in abundance since 2006: 5% decrease

Recorded in: 74 tetrads (23% of those covered)

Range change since 2006: No change



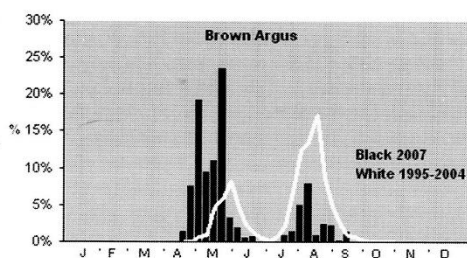
This species held up despite the poor weather, and reappeared at some localities: "Delighted to find a Small Copper in Tottenham Cemetery among the older graves where there are patches of sorrel and bare earth – I saw one in the same area in 2004, but never again until now" (Diane Andrews on 18th September). At present the map is showing strong populations on the outskirts of London, and Mike Taylor writes of Kenwood: "we continue to have a significant Small Copper population in and about a SSSI sphagnum bog that has held strong this year - 20 compared to 23 in 2006. The bog is in acid grassland with abundant Sheep's Sorrel, which is cut once a year in late summer with some areas left uncut for 2 years on rotation to encourage structural diversity including ant-hills". At Patmore Heath, one of its strongholds, Gavin Vicary writes: "It seems to have been a less than average year for the Small Copper. The Herts & Middx Wildlife Trust have continued to carry out conservation work here and as long as grazing is maintained there is some reason for optimism for good numbers here in the future." Probably as a result of the poor summer weather, for the first time the spring brood produced a stronger peak than the later generations.



Small Copper
Photo: Clive Burrows

Small Blue *Cupido minimus*

Michael Kings records a possible Small Blue at Broad Colney on 18th May and also again four weeks later: "It was definitely a blue and small, being mostly sooty-coloured and disappearing rapidly into a hedge – my problem is that the species is a very unlikely occurrence in the area" As Michael intimates, this will have to go down as a "possible".



Brown Argus *Aricia agestis*

First seen: 16th April at Waterford (Liz Goodyear)

Last seen: 16th September at Aldbury Nowers (Martin Hicks)

Peak date: 20th May

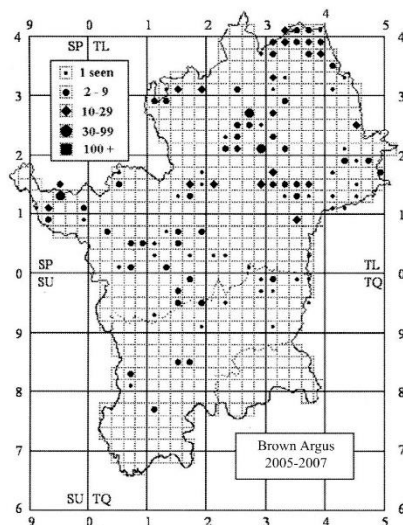
Maximum number seen: 28 north of Ware on 3rd May (Liz Goodyear & Andrew Middleton)

Mean index of abundance: 9

Change in abundance since 2006: 66% decrease

Recorded in: 42 tetrads (13% of those covered)

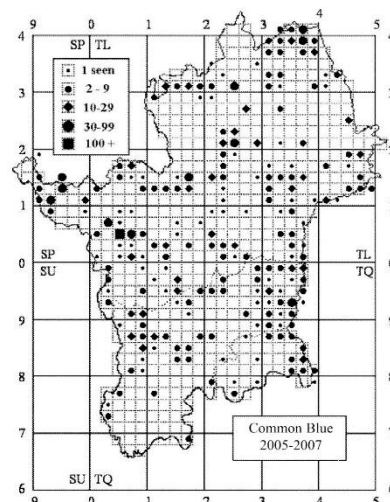
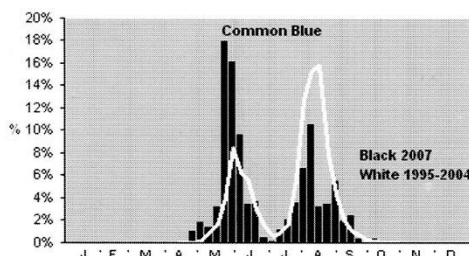
Range change since 2006: 17% contraction



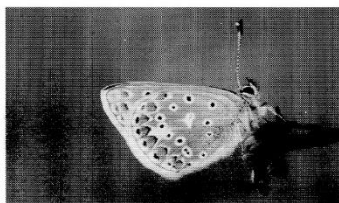
The very early sighting by Elizabeth Goodyear on April 16th is the earliest ever by 11 days. The season was a poor one, but despite the drop in numbers they evidently flourished at some localities: "unusual for this area were very good numbers of both Brown Argus and Marbled Whites, in fact they far outnumbered everything else (apart from grasshoppers that is)" (Ashley Cox on 22nd July at Wheathampstead "Long Meadows"). There were also some new sites reported: "first record ever of Brown Argus" (David Howdon at Horsenden Hill), and they are clearly breeding there: "I finally caught up with the Brown Argus reported by Mike Rubin on Horsenden Hill. In fact I had no success in the meadow where Mike reported his individual, instead finding 3, including a pair in cop, in a nearby meadow. They are pretty aggressive towards the Small Coppers that are common in the same area. Presumably they must be using storksills or cranesbills as foodplant on this site, as there is no rock-rose. Noticed that they are only really active in direct sunshine, preferring to sit when the cloud cover rolled in" (Andrew Culshaw on 8th August)

Common Blue *Polyommatus icarus*

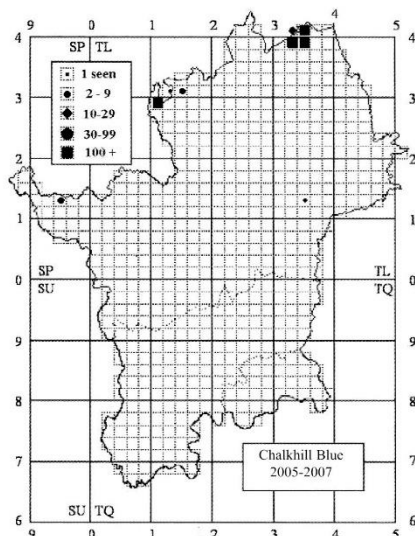
First seen: 24th April at Tring Park (Brian Jessop)
Last seen: 18th October north of Ware (Andrew Middleton)
Peak date: 30th July
Maximum number seen: 17* at Bunkers Park on 22nd May (Michael Pearson)
Mean index of abundance: 12
Change in abundance since 2006: 66% decrease
Recorded in: 78 tetrads (25% of those covered)
Range change since 2006: 23% contraction



This species emerged early, and also peaked 4 days earlier than before recorded. Their numbers fell by an identical amount to the previous species, clearly related to the weather rather than food supply: "Common Blues were thin on the ground – even though Birdsfoot Trefoil was the best I have ever seen it." (Bob Clift). An interesting observation of adult feeding was observed by Michael Kings: "Strangest sight: a Common Blue apparently feeding on a dead mouse, on a footpath near Hartspring Leisure Centre". Lycaenids are occasionally attracted to human skin, presumably to feed on the salts, perhaps this individual was doing this for the same reason.

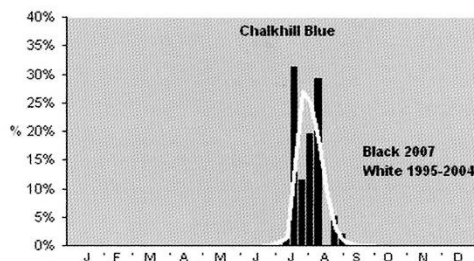


Common Blue
 Photo: Clive Burrows



Chalkhill Blue *Lysandra coridon*

First seen: 13th July at Therfield Heath (Alan Beale)
Last seen: 2nd September at Therfield Heath (Alan Beale)
Peak date: 10th August
Maximum number seen: 53 at Therfield Heath on 12th August (Alan Beale)
Mean index of abundance: 53
Change in abundance since 2006: 66% decrease
Recorded in: 5 tetrads (1.6% of those covered)
Range change since 2006: 2% contraction



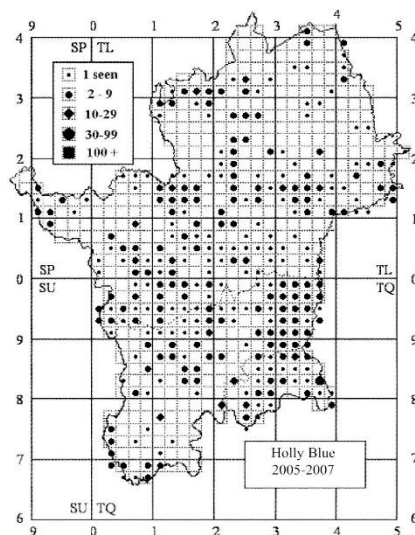
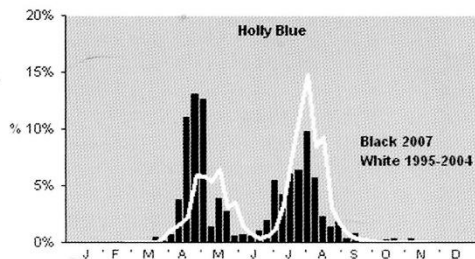
Numbers have fallen at Therfield Heath, the species' traditional stronghold: "A visit to the main Chalkhill Blue area to the south of fairway No.10 was hugely disappointing. There is an electric fence to control sheep grazing and the turf has been eaten down to a very short sward. Not a flower of any sort to be seen (this is where the Pasque flowers are abundant in the spring). It seems to be very heavily over-grazed and I have never seen it in this state before in the 15 years I have lived in this area. Somebody must know what they are doing – well I hope so" (Jack Harrison on 5th July). Numbers are certainly alarmingly low when looking at the transect results over the past 12 years:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Therfield Heath:	188	?	157	716	768	146	?	153	242	682	149	33
Therfield (Church Hill):						417	?	443	667	144	294	14

Hexton Chalk Pit usually has a very short, rabbit-grazed sward and very high Chalkhill Blue numbers. Sheep trampling, particularly in a wet summer, may make a considerable difference, and the balance between optimum and over-grazing can be very fine. Certainly something odd is happening here: alone amongst all the early flight seasons this year, Chalkhill blue has the *latest* peak date yet recorded.

Holly Blue *Celastrina argiolus*

First seen: 11th March at Ware (Ian Edwards)
Last seen: 3rd November at Horsenden Hill (David Howdon & Andrew Culshaw)
Peak date: 23rd April
Maximum number seen: 17* at Tower Hamlets on 7th July (Terry Lyle)
Mean index of abundance: 16
Change in abundance since 2006: 74% increase
Recorded in: 158 tetrads (50% of those covered)
Range change since 2006: 65% expansion



Holly Blue is pushing the bounds at both ends of the season: Ian Edwards' sighting on 11th March equals the earliest ever of 1997, and the extraordinary last sightings, two being seen in the Horsenden Hill area, are only exceeded by the records from 11th November 2004 and 9th November 2006. Equally surprising was the manner of finding the second individual: "2 Holly Blues; the first was nectaring on ivy flowers on the south side of Horsenden Hill during the morning, the second was discovered after dark while Dave Howdon and I were mothing in Perivale Wood, roosting on an ivy flower" (Andrew Culshaw). It was a very good year for this species, which increased substantially and more than any other, but its fluctuating cycle of about six years, apparently a result of predation by the parasitic *Ichneumon* wasp *Listrodromus nyctemerus* (Revels 1994), is probably reaching a maximum:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Danesbury:	50	8	10	0	1	3	6	1	19	6	7	6
Kings Langley:		5	12	5	3	5	3	6	9	13	6	5
Railway Fields:		10	27	7	19	11	16	16	12	10	8	13
Stevenage:	79	10	9	2	0	11	2	0	24	9	3	2

White Admiral *Limenitis camilla*

First seen: 9th June at Ruislip (Ched George)

Last seen: 1st August at Balls Wood (Jan Hein van Steenis)

Peak date: 25th June

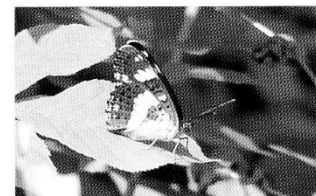
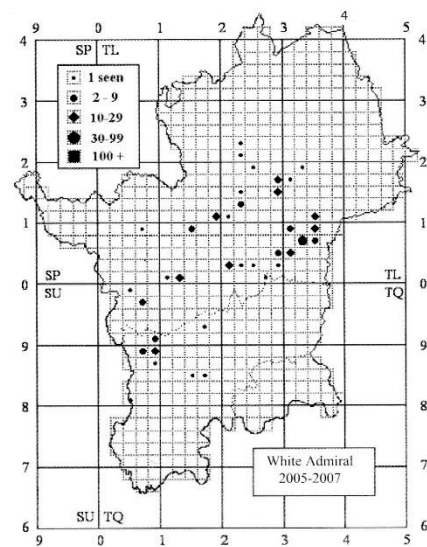
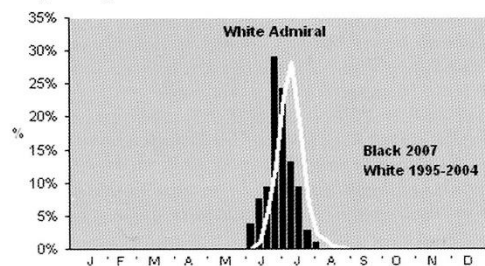
Maximum number seen: 5 at Balls Wood on 1st July (Andrew Wood)

Mean index of abundance: 5

Change in abundance since 2006: 65% decrease

Recorded in: 11 tetrads (3.5% of those covered)

Range change since 2006: 40% contraction

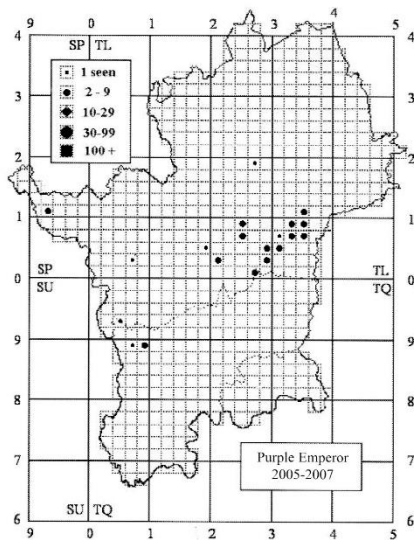


White Admiral
Photo: Andrew Wood

"The cool damp summer saw numbers and range low for White Admiral in 2007. However this year established a new early date for the species with Ched George's 9th June record at Ruislip Woods, and there were further sightings at Ruislip and Balls Wood also exceeding the previous earliest date of 11th June 2004. The warm dry April following a mild autumn and winter doubtless speeded up larval feeding and pupation. Nowhere were numbers high, and virtually all the observations were from the core south Hertfordshire/northwest Middlesex woodland sites. Whether this marks a retreat to those sites, or limited opportunities for observation caused by the poor weather it is difficult to say; possibly it is a combination of circumstances. Unsurprisingly 2006's second brood did not recur, there being only one record in August and that on the 1st. In 1987, reviewing the records for this species in Hertfordshire since the first record in 1916, Brian Sawford noted the flight period as "late June to mid August" and the earliest date as 26th June 1960 (Sawford 1987). However in the past 13 years this species has shown a marked change in its flight period from that above to the second week of June and through July. In 2007 the peak flight period was the last week of June. In 1995-2004 it was the 9-15th July. Looking for this species much beyond the end of July may well now be a fruitless exercise"

-Andrew Wood.

% Records/month	June	July	Aug
1995-1999	8%	84%	6%
2000-2004	29%	69%	2%
2005-2007	36%	63%	1%



Purple Emperor *Apatura iris*

First seen: 1st July at Broxbourne Woods (Kevin & Sandra Standbridge)

Last seen: 11th August at Broxbourne Woods (Ian Small)

Peak date: 8th July

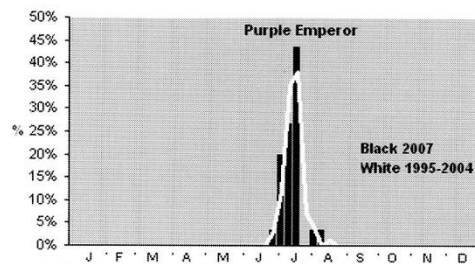
Maximum number seen: 2 at several locations, 8th – 22nd July

Mean index of abundance: 1

Change in abundance since 2006: No significant change

Recorded in: 8 tetrads (2.5% of those covered)

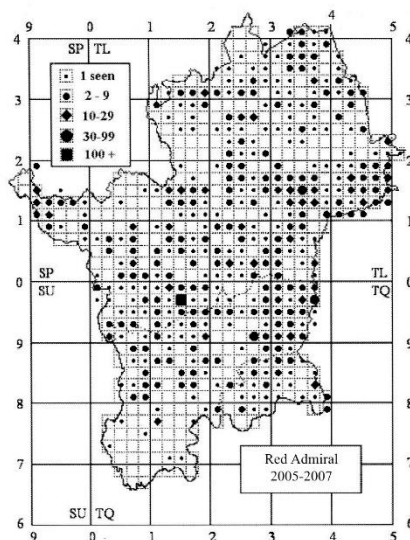
Range change since 2006: 22% contraction



Nationally, the first male was seen, as always, by Ken Wilmott in Surrey on June 19th, the earliest UK sighting since 1893! However, the weather deteriorated before any sightings were made in our area and the 2007 season is noted as being very poor, with few sightings even when the sun shone. Both field trips were very disappointing and this was not a season for prospecting new sites. The first Purple Emperor was seen late afternoon on July 1st in Broxbourne Woods by Kevin & Sandra Standbridge, who had spent all day searching. Generally, numbers were very disappointing, but the major territories were occupied, with a maximum of 2 males at Park Wood, Ruislip, on July 14th. The last sightings were of a male in Hoddesdon Park Wood on August 10th by Laurence Drummond and a female in Broxbourne Woods on August 11th by Ian Small. Of additional note, a Purple Emperor was reported from the Ashridge Estate, near Tring on August 10th. Although the butterfly was seen a few metres inside Buckinghamshire, this large woodland complex is an area which we have felt for some time could support a colony. Another surprising report came from David Chandler: "I know this sounds incredible but I visited my mother, Violet Chandler, yesterday and she told me she had seen a big mauve blue butterfly with white spots about ten days ago [around 3rd July]. I said was it a Common Blue but she said no it was bigger than that, larger than a Red Admiral. We looked on the butterfly chart and she pointed out Purple Emperor! I asked "are you sure because I would not expect to see one in Kings Langley", and she said "Yes. I know what I saw and I got a very good look at it on the lavender by the back door before it shot off". Mum is convinced she saw a Purple Emperor; she had never seen a butterfly quite like this one before so knew it was different. I'm amazed; the nearest colony is a good few miles away, but I always suspected they are around in the Watford area having found a Purple Emperor caterpillar (with horns) as a child in the 1960s." Since 2005 there have been three reports from the willow-rich Grand Union Canal corridor and this area certainly deserves more study but like a lot of areas, it's hard to know where to start. In 2007 we visited the Whippendell and Berrybushes Woods and watched several high points for territorial activity but with weather conditions as they were, it was impossible to predict the right day to visit. Another unusual report reached us via Colin Plant from Tim Freed: "On 11th July 2007 a female was found at about 08h30m squashed (well and truly!) on the pavement in Bell Yard WC2 (beside the High Court). The lady that found it believes she saw the same insect (large dark butterfly) flying in the same place a couple of days earlier" We can't suggest how a Purple Emperor was flying in central London, it could have been a release, or even hitched a lift on a train from one of the Surrey sites. We will never know. (Liz Goodyear & Andrew Middleton)



Purple Emperor
Photo: Alan Downie



Red Admiral *Vanessa atalanta*

First seen: 1st January at Hilfield Park & Stoke Newington Reservoirs (4 observers)

Last seen: 3rd December at Shenley (Jim Terry)

Peak date: 5th July

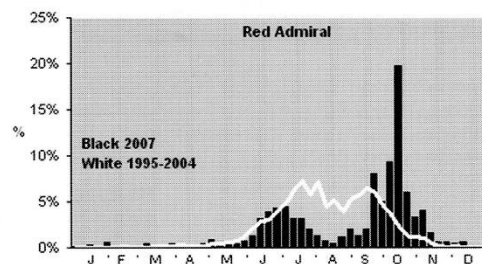
Maximum number seen: 12 at Bencroft Wood on July 5th (Steve Kiln)

Mean index of abundance: 14

Change in abundance since 2006: 5% increase

Recorded in: 193 tetrads (61% of those covered)

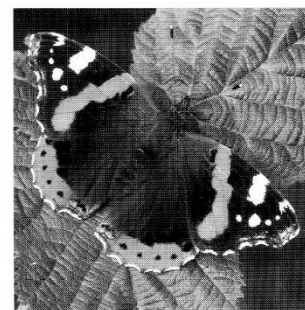
Range change since 2006: 12% contraction



After the warmest winter that England had ever experienced, it is not surprising that there was strong evidence of widespread winter survival and activity of Red Admirals. "We had Red Admirals seen in Tower Hamlets Cemetery Park every month of the winter 2006-2007" writes Terry Lyle. Earlier last century, because virtually no hibernating insects were found, Red Admiral was assumed to be solely a migrant that died off each winter, but there seems to have been a change in recent years, with many reports of winter individuals, though nothing has approached the number of sightings in winter 2006-7. Altogether, it was seen flying on 13 days in December 2006, 9 days in January (including 1st January, 5 days earlier than ever seen before), and 8 days in February. The total number of Red Admirals reported in our area for each month from October to April were as follows:

October 06	November 06	December 06	January 07	February 07	March 07	April 07
1352	159	33	21	23	36	67

This unusual winter activity, perhaps unsurpassed, also attracted some media interest, as noted by Colin Everett: "BBC News 24 on 4th February featured a photograph taken of a Red Admiral "in London" on 31st January; at lunchtime on 29th January; BBC weather presenter Peter Cockcroft reported that a butterfly had just flown past him on the roof of the London Weather Centre in Holborn WC2, and in mid-January BBC News also carried a photograph of a Red Admiral from Uxbridge." As well as flying, there were also reports of breeding, at least early in the winter: "There were two Red Admirals on the last few Buddleia flowers in the garden and in the field behind my house, where the shelter of a fence makes for some very warm nettles. These two were both intermittently feeding on ivy and coming down to test the nettle leaves. One laid at least two eggs" (Nick Bowles on 3rd November at Tring). This winter survival may have been the reason why numbers went up in 2007, and the long term picture from transect results looks healthy, though it should be noted that Autumn 2007 numbers were low again.



Red Admiral
Photo: Andrew Wood

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Balls Wood:	7	3	6	6	4	0	4	2	3	4	13	13
Hampstead Heath:	5	3	12	2	4	7	9	10	1	0	9	22
Patmore Heath:	14	8	20	8	28	7	12	37	7	15	7	39
Rothamsted:	8	9	12	8	4	1	2	21	3	4	7	16



Photo: Tim Hill



Photo: Andrew Wood

(Above) The Dinky Skipper is one of our branch's rarest species, being confined to a few sites, mainly in the west of the county. It is probably the most "moth" like of our butterflies as this picture of a mating pair at Hexton Chalk Pit on 30th April 2007 shows. This small site (above right) is a Herts and Middx Wildlife Trust reserve in the north of Hertfordshire and is well worth visiting to see this species, as well as the Chalkhill Blue later in the summer.

(Right) A number of blue butterfly species are attended by ants during their larval stage. This is one of our commonest blues - the Holly Blue. It is being groomed by ants at Ponders End in north east Middlesex. The larva is on Alder Buckthorn which is a less usual foodplant for Holly Blue, being generally associated with Brimstone larvae



Photo: Andrew Middleton



(Left) Mardley Heath, north of Welwyn Garden City is one of our more recently started transects. This Brimstone was photographed there during 2007, feeding on ragwort nectar

Photo: Sue Stephens

(Right) Probably our area's commonest hairstreak is the Purple Hairstreak. As it tends to fly high up around the tops of oak trees in the early evening it is probably under recorded. If they do come down low and rest with their wings open, they can be seen to be very attractive insects. This one was seen on the 11th July 2007 at Broxbourne Wood



Photo: June Crew



Photo: Andrew Middleton

(Above) The Small Copper is one of those species which gives us cause for concern as is showing a general decline in distribution and numbers. This mating pair was seen at Much Hadham on the 24th April 2007.



Photo: Alan Reynolds

(Above) The Small Heath is another species causing concern, although it has shown some signs of increase in recent years. This one is on the Kings Meads between Hertford and Ware



Photo: Andrew Middleton



Photo: Andrew Middleton

(Above) Liz Goodyear and Andrew Middleton from our branch are co-ordinating a national survey of the Whiter-letter Hairstreak. Despite the many years of publicity about the decline of elms due to Dutch Elm disease there is still plenty of elm around, much of it in hedges or as regrowth and the White-letter Hairstreak is probably more under recorded than uncommon. These pictures show larvae feeding on the growing seeds of elm.



Photo: Andrew Wood

(Above) Butterfly chrysalids are often difficult to find in the wild. This is a Comma chrysalis suspended from the underside of a nettle leaf in Ware Park on 24th May.

Photo: Paul Thrush

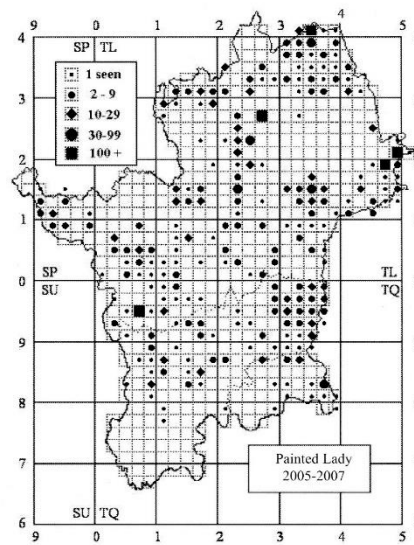
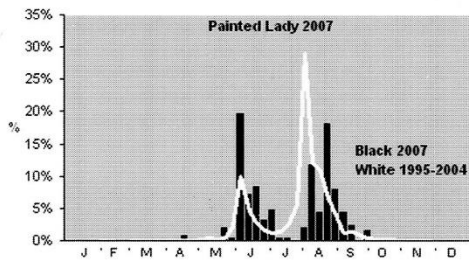


Photo: Paul Thrush

We continue to closely monitor the two species of Fritillary that are found in our area. 2007 was not such a good year as 2006, but both the Silver-washed Fritillary (above left) and Dark Green Fritillary (above right) were again recorded. These examples were both seen on the 8th July at Aldbury Nowers in the far west of Hertfordshire.

Painted Lady *Cynthia cardui*

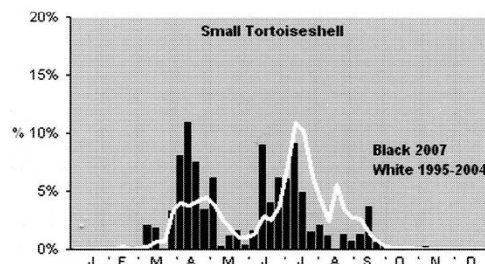
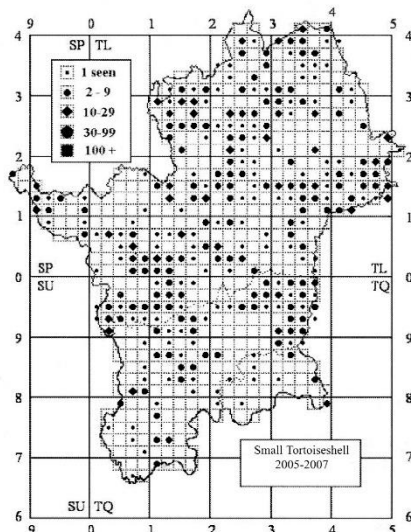
First seen: 16th April at Beane Hill (Michael Berthoud)
Last seen: 1st November at Tower Hamlets Cemetery Park (Terry Lyle)
Peak date: 23rd August
Maximum number seen: 8 at Bishops Stortford on 25th August (Bob Clift)
Mean index of abundance: 2.9
Change in abundance since 2006: 89% decline
Recorded in: 91 tetrads (29% of those covered)
Range change since 2006: 36% decline



Though nothing like as early as Red Admiral, nonetheless the mid-April sightings of Painted Lady are earlier than usual, and though this species normally cannot survive the winter, it may be evidence that some individuals managed to do so. It would certainly have been its best chance for a long time. After last year's spectacularly high numbers, it's not surprising that there was a fall this year, but compared to the average, numbers have held up reasonably well. There was a distinct but modest immigration in June, with the home-bred generation appearing in August. A few insects stayed on into the autumn with just sighting in each of October and November.

Small Tortoiseshell *Aglais urticae*

First seen: 7th March at Bishops Stortford (Tony Moverley)
Last seen: 4th November at Rickmansworth (Sheila Lee)
Peak date: 15th April
Maximum number seen: 20 at Bishops Stortford on 9th July (Jim Fish)
Mean index of abundance: 8
Change in abundance since 2006: 12% increase
Recorded in: 113 tetrads (36% of those covered)
Range change since 2006: 8% contraction

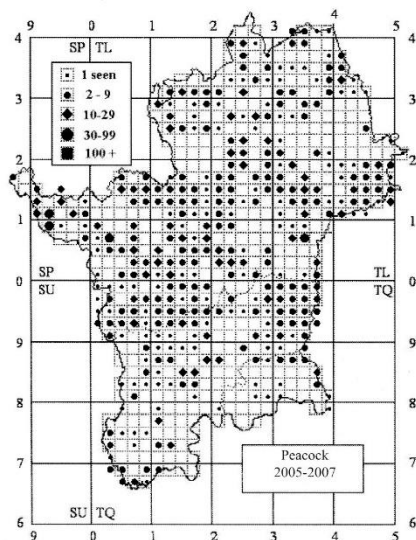


"A bit of a recovery with a stronger summer brood" writes Andrew Wood of Ware Park. (Wood 2007a). The summer brood was also earlier than usual, reaching a maximum in late June to early July instead of mid- to late July. Numbers held up compared to the substantial drops of the previous two years, presumably due to high survival rates over the warm winter 2006-7. Pollard & Yates (1993) find that a dry March gives rise to higher numbers, and March was certainly dry in 2007, but they find that warmth in May and July also increase populations, which was certainly not the case this year.

Camberwell Beauty *Nymphalis antiopa*

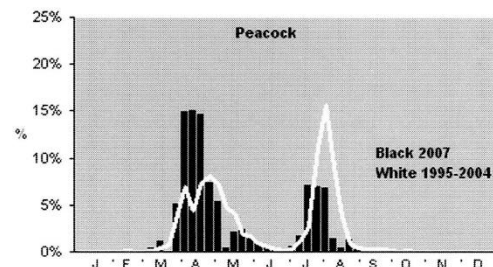
First seen: 2nd April at Elstree (John Hollingdale)
Last seen: 29th August at Ealing (Quentin & Honor Phillips)
Peak date: unclear
Maximum number seen: 1 at each location
Recorded in: 4 tetrads (1.3% of those covered)
Range change since 2006: 50% contraction

This very rare migrant once again graced our fields and gardens this year, though with four sightings reported, numbers were only a quarter of last year's record total. John Hollingdale was one of the lucky few, seeing an early one whilst checking out tetrads for butterfly mapping "in fields north of Elstree. I only went there to see what the tetrad looked like". Then on 29th May, Vincent Judd reported a "Tatty Camberwell Beauty at Long Meadow, Markyate". There were no more spring sightings, but on 5th August Pippa Hyde saw one in Connaught Road, Teddington, right on the southern border of Middlesex, and 3 weeks later Quentin and Honor Phillips saw the final one: "There was a Camberwell Beauty in our garden on Sunday morning 26th August for about 6 or 7 minutes. It looked in perfect condition and was flying strongly. It fed on buddleia for a few minutes and then flew off westwards". In view of the fact that 2007 was a comparatively poor year for migrants, it seems quite possible that the two spring individuals were winter survivors, and that the August specimens were bred from eggs laid by the spring generation. This is very similar to what happened following the last big Camberwell Beauty invasion of 1995, when in 1996, two spring and two late summer individuals were seen in our area. If things follow the same pattern, then we could see singletons in 2008 and 2009.



Peacock *Inachis io*

First seen: 19th January at Rye Meads (Steve Lane)
Last seen: 4th November at North Mymms (Jane Fielding)
Peak date: 6th April
Maximum number seen: 29 at Balls Wood on 16th April (Andrew Wood)
Mean index of abundance: 31
Change in abundance since 2006: 21% increase
Recorded in: 197 tetrads (62% of those covered)
Range change since 2006: 17% expansion



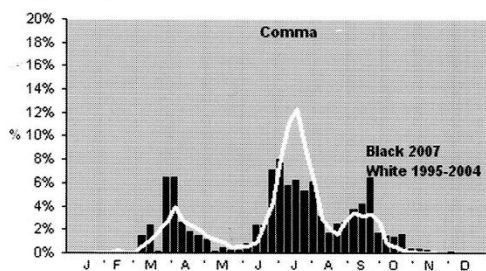
Steve Lane spotted the first Peacocks at Rye House on 19th January: "was surprised to see two Peacocks, flying in the early afternoon sun". Though not so much in evidence as the Red Admiral, this species seems to have had an excellent winter survival rate, with a strong early peak in April. However, the summer brood definitely seems to have suffered from the poor summer weather, producing a lower summer maximum at the beginning of August, no earlier than usual. Overall, numbers increased over 2006, but looking at the long-term trends from transect data, this species has generally produced lower numbers after 2000:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Balls Wood:	164	127	58	91	114	9	71	46	64	68	29	72
Gutteridge Wood:	31	33	45	31	38	15	24	17	22	27	8	24
Knebworth Park:	18	71	59	57	94	19	69	36	57	51	41	89
The Warren:	66	43	32	55	31	10	34	14	55	42	14	39

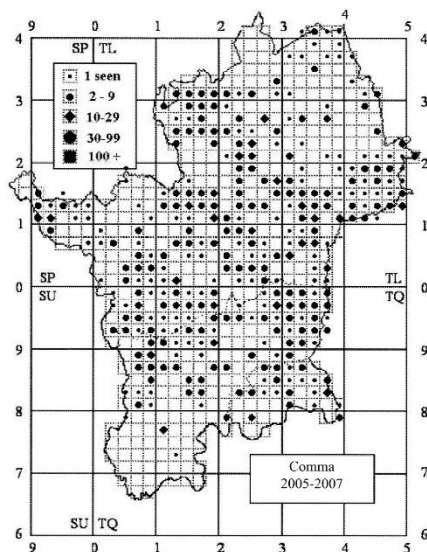
Andrew King reports this species encountering a would-be predator on 27th July in Whippendell Woods: "A Hornet worker appeared to be trying to hunt the butterflies, but I only saw it tackling Peacocks, which just jumped away and flew off".

Comma *Polygonia c-album*

First seen: 3rd February at Watford (David Chandler)
Last seen: 2nd November at Welwyn (Jacqueline George)
Peak date: 22nd June
Maximum number seen: 17* at Tower Hamlets on 29th June (Terry Lyle)
Mean index of abundance: 13
Change in abundance since 2006: 39% decrease
Recorded in: 148 tetrads (47% of those covered)
Range change since 2006: 5% contraction

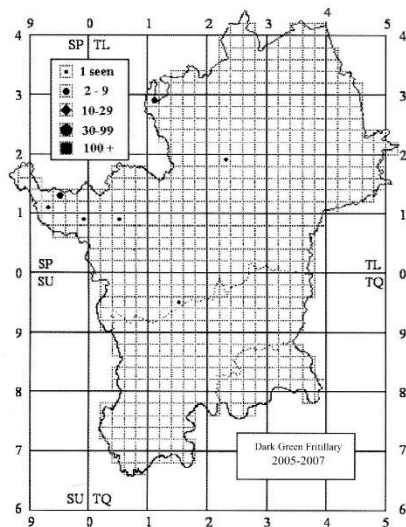
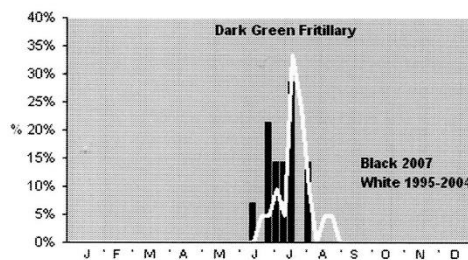


Again, this species had a very early start: "I saw my first butterfly of the year, a Comma, nectaring on a winter flowering shrub at Reeds Chapel, Central Park, Watford. It was the highlight of my day because the football was a real disappointment" (Dave Chandler on 3rd February). This was the earliest ever sighting, beating the 1998 record by 4 days. The spring brood peaked at the beginning of April, and the summer emergence had a peak date four weeks earlier than average. However, as with so many of the species with unusually early flight periods, numbers were well down on last year. The flight diagram indicates a possible third brood in late September, though a very weak one. The distribution map shows this species to be fairly widespread, though there are many gaps as yet, probably due to under-recording during its peak periods.



Dark Green Fritillary *Argynnis aglaja*

First seen: 17th June at Aldbury Nowers (Dave Mackenzie)
Last seen: 5th August at Aldbury Nowers (Martin Hicks)
Peak date: (11th July)
Maximum number seen: 2 at Aldbury Nowers, June 28th, July 7th & 18th (Martin Hicks)
Mean index of abundance: 7
Change in abundance since 2006: (550% increase, but very small numbers)
Recorded in: 3 tetrads (0.9% of those covered)
Range change since 2006: 32% contraction



Not only is Dave Mackenzie's 17th June sighting the earliest ever by 3 days, but the total of 14 sightings in our branch area this year is the highest since the branch was formed in 1995. All but two of these sightings were at Aldbury Nowers, where there was a viable colony of the species earlier in the last century, and the recent improvements there give rise to the hope that it is breeding again in this promising site. However, this is not yet certain: "On a wonderful

warm evening, two Dark Green Fritillary seen in the southern section of Aldbury Nowers. One at 17h20m showed egg-laying behaviour but no eggs found; another rather tatty individual at 18h40m nectaring on thistles" (Andrew Palmer on 18th July). Tring Park, where the species has also been resident in the past, seems to have missed out, save for one sighting: "I saw a very worn Dark Green Fritillary flying continuously up and down the bottom of the steep escarpment leading up to the wood. It settled occasionally so that I could identify it". (Phil Woodward, Tring Park, July 19th). Most interesting is the following account from Steve Murray on 16th July at Hilfield Park Reservoir: "Quite late in the afternoon, suddenly my gaze fell upon a large orange butterfly nectaring on Knapweed at about 15 yards range. Raising my binoculars I was staggered to see that it was a large Fritillary. It proved to be very flighty, not staying on one flower for long, and kept moving anything from a couple of feet to 30 yards or so, when its flight was seen to be strong and fast. I did get some fantastic views at ranges down to closest focus at about 5 yards. The all-important views of the underside pattern were still proving difficult to obtain but I did eventually clearly see about ten to twelve roundish apparently white spots in the central area of the underside of the hind wing, ruling out Silver-washed. At times it would settle on the same plant as one of the Marbled Whites, emphasizing its impressive size and muscular appearance. I returned a couple of times over the next few days but never saw it again". This is 20 or so miles from Tring or Aldbury Nowers, but this is not the first Dark Green Fritillary to be seen on the outskirts of London, one being seen at Brent Reservoir in 1999, showing how far this powerful insect is prone to wander. The long-term picture is encouraging, in that the recent increases parallel those of Silver-washed Fritillary, though the numbers are far fewer, suggesting that both butterflies might be on the verge of establishing breeding colonies for the first time in about 40 years:

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Tring Park:	0	2	1	0	0	0	0	0	0	2	0	1	0
Aldbury Nowers:	0	1	0	0	0	0	0	0	0	1	1	0	7
All Records:	1	5	4	0	2	0	0	6	0	4	1	7	14

Silver-washed Fritillary *Argynnis paphia*

First seen: 20th June at Tower Hamlets (Ken Greenway)

Last seen: 10th August at Hoddesdon Park Wood (Lawrence Drummond)

Peak date: (8th July)

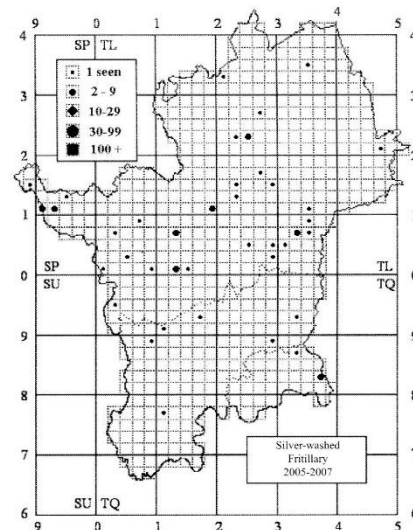
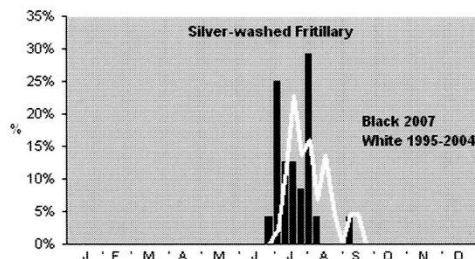
Maximum number seen: 8 at Whippendell Wood on 8th July (Trevor James & Colin Everett)

Mean index of abundance: 2.5

Change in abundance since 2006: 5% increase

Recorded in: 12 tetrads (4% of those covered)

Range change since 2006: 54% contraction

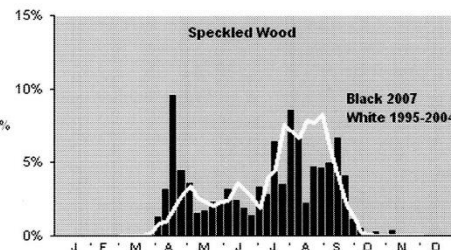
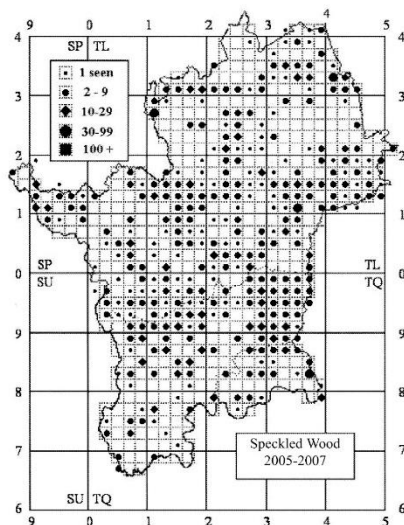


Good news for this butterfly too, with transect abundances marginally higher than last year, although it was only seen in less than half the number of localities. Altogether, 28 individual butterflies were seen on 15 dates at 13 different localities, as opposed to 59 butterflies on 30 dates at 35 localities last year. The first sighting, at Tower Hamlets, where it was also seen last year, is the earliest date ever reported from Hertfordshire or Middlesex, beating the previous 1947 record by 8 days. Clive Burrows' sighting at Bricket Wood on June 25th also beats the 1947 record. On 3rd July, Don Gregory saw one at Astonbury Wood, Stevenage: "It settled on a large leaf of a wild raspberry cane (just inside the gate from the meadow at the northwest entrance to the wood) and stayed for 5 or 6 minutes with wings open fully flat. I couldn't get a look at the underside." The following day, Ian Thompson & Yvonne Bunting saw a male at Northaw Great Wood on the Yellow trail along the boundary with Cuffley Camp ground, but despite repeated trips by Darin Stanley to Symondshyde Woods it failed to appear until "Hooray Henry, after my 6th visit to

Symondshyde Woods I got lucky. Between 11h30m and 13h30 located a female Silver-washed Fritillary on July 8th." The same day, during a BENHS/LNHS field trip Trevor James reports the most extraordinary sighting: "What a terrible year for everything - except Silver-washed Fritillaries! On 8th July, we (Colin Everett & myself plus a few others) had no less than 8 in Whippendell Wood - probably the most numerous butterfly in the wood on the day!" In the past there was a colony, fairly plentiful in the 1950s, at Whippendell Wood between 1942 and about 1980. This year there were also sightings at Bencroft Wood (Steve Kiln), Quickly Lane, Rickmansworth (Ann Piper), Cowheath Wood (Richard Andrews), and three sightings in different parts of Welwyn Garden City "One male Silver-washed Fritillary showing extremely well, sunning itself at 8.55 a.m. on bushes in my front garden" (Tony Dorman on 21st July in the west side of Welwyn Garden City). There were two reports of this butterfly attacking Commas, presumably because of their similar appearance: "One male Silver-washed Fritillary chasing Commas and everything else in sight" (Darin Stanley on July 12th at Symondshyde Woods), and "saw Silver-washed Fritillary giving a Comma a very hard time next to the buddleia bushes at the far western end of the ridge, obviously few of his own kind available" (Colin Sturges on July 22nd at Tring Park). The last sighting was by Laurence Drummond on 10th August at Hoddesdon Park Wood: "a worn Silver-washed Fritillary in the central open area by the crossway". Despite the evident drop in numbers which is likely to be related to the poor weather in its flight period, hopefully the wide-ranging distribution seen this year in many of its previous localities will lead to long term breeding colonies again.

Speckled Wood *Pararge aegeria*

First seen: 20th January at Tring (Ray Williams)
Last seen: 21st November at Grove Farm (Mike Rubin)
Peak date: 18th August
Maximum number seen: 32 at Lilley on 11th August (Andrew Wood)
Mean index of abundance: 49
Change in abundance since 2006: 25% decrease
Recorded in: 166 tetrads (52% of those covered)
Range change since 2006: 4% expansion



The year 2007 began with one of the most extraordinary earliest ever sightings, which beats the previous (1998) record by 47 days! Prof. Ray Williams takes up the story: "On 20th January 2007, I found a live specimen of the Speckled Wood, *Pararge aegeria* Linn. It was among a pile of dead leaves that I was clearing from my back yard in Tring, Hertfordshire. The yard is surrounded by a ten foot high wall, is cobbled, and has no flowerbeds or grass within it. It is protected from all but severe winds, and the maximum temperature in the yard at ground level on that bright, sunny day was 11°C. Two days earlier (18th January) was a day of great gales and torrential rain, so the butterfly could have been blown into the yard, but its survival is remarkable considering the cold and wet conditions in the exposed piles of leaves. The nearest mixed grassland and woodland is only about 400 metres away, however, in the direction of the source of the prevailing wind. The butterfly was identified unequivocally by direct comparison with the coloured photographs of dorsal and ventral wing surfaces in Carter (1982). It appeared clean, fresh and undamaged, as if newly emerged from its chrysalis. It had enough strength to cling to my fingers, and when I placed it on some flowers in my greenhouse, it stayed put until it feebly flapped its wings, throwing itself to the ground. Despite several attempts to settle it on flowers, it repeatedly did this. So although not "on the wing", it was amazingly lively considering the conditions. This morning (21st January), I can't find it, but it must still be in the greenhouse, although probably now dead." Although the somewhat moribund state of the butterfly suggests that this was some kind of "accidental" emergence, it is none the less an indication of the amazing effect that our mildest-ever winter has had on butterfly phenology in this unusual year. One has to remember that the final Speckled Wood of 2006 was seen on December 6th, only just over 6 weeks previously. Later in the year, there was another strange occurrence at Marshalls Heath on July 24th. Stuart Ball photographed what he first thought was a Wall butterfly, but which on subsequent examination turned out to be the orange Mediterranean form of the Speckled Wood. This has never been recorded in Britain before, and is several hundred miles outside its known range, so the most likely explanation is a captive-bred

release. On the other hand it seems odd to be breeding a continental variety of a common British species. There was a very late sighting by Mike Rubin on November 21st, the second latest ever: "*A Speckled Wood surprised me at lunch time today at Grove Farm, Middlesex on the hill below the Council estate. Not bad considering the recent cold snap. It was on the wing and I got a good look, but quickly lost it in the glare and the shadows*". This sighting means that the flight period for this species in 2007 has been the longest ever recorded: ten months and one day. Numbers fell this year, and the overall picture is of a slow decline after the turn of the Millennium following gradual increases before it:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Danesbury Park:	15	25	65	66	72	26	69	43	47	36	33	27
Rothamsted Farm:	4	4	22	20	75	12	17	31	12	23	18	14
Stevenage:	143	184	288	305	226	197	189	230	212	125	110	111
Ware Park:	29	90	80	106	103	39	54	56	55	53	53	37

Wall *Lasiommata megera* No records of Wall were reported in 2007.

Marbled White *Melanargia galathea*

First seen: 11th June at Tring (Nick Bowles)

Last seen: 7th August at Knebworth & Tring (Ken King & Brian Jessop)

Peak date: 10th July

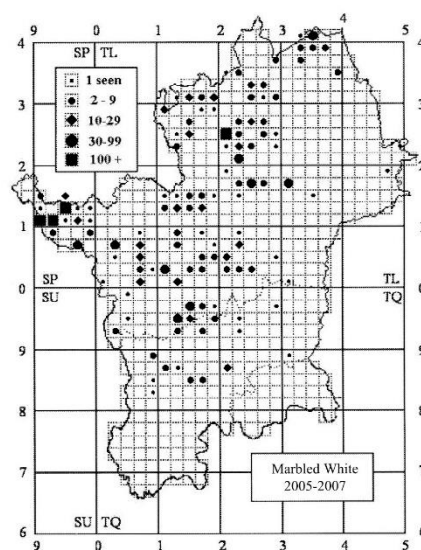
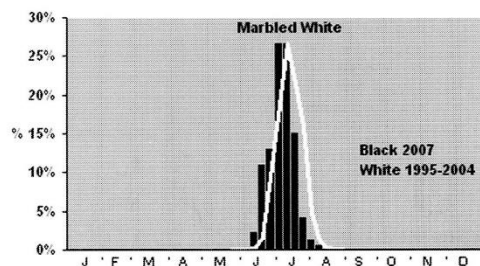
Maximum number seen: 146* near Tring on 8th July (Brian Jessop)

Mean index of abundance: 59

Change in abundance since 2006: 24% decrease

Recorded in: 67 tetrads (21% of those covered)

Range change since 2006: 43% expansion



This species also had its earliest ever sighting, by 4 days. However, the season as a whole was not any earlier than usual, the peak numbers occurring within one day of the average. Numbers were down, but on the other hand the range has expanded, and there were several reports of new areas of colonization: "*I thought you would like to know of my sighting of a Marbled White in the field behind the houses along the London Road in Langley, near Stevenage. I have lived here for over 10 years and this is my first sighting*" (Adrian Pomfret on July 1st). "*I've only started to see it this year*" (Paula Greenaway on 6th July at Nash Mills, Hemel Hempstead). "*Found new spot for Marbled White just off the end of St Albans Lane, on the Hemel Hempstead to St Albans road. They were flying just off the roadside verge and into some private land. It looked a good colony; I counted 8 around me in 3 or 4 minutes*" (Clive Burrows on 6th July). "*Marbled Whites have prospered, spreading along the semi-urban parts of the Colne valley between Bushey, Watford and Rickmansworth*" (Michael Kings). "*I found 5 Marbled Whites in Burnham Green, in the grassy margins of a pea field*" (David Booth on 9th July). "*We have discovered a colony of Marbled White butterflies in a field east of Stapleford (near Hertford) where we have been walking our dog for many years*" (Annabel Lever on July 14th). The species also continues to spread into London: "*A real highlight was the appearance of a single Marbled White on July 13th - a new butterfly for Railway Fields, and a further small range extension into central London (Railway Fields lies 2 kilometres south-east of Alexandra Park, where the butterfly was seen for the first time in 2004)*" (David Bevan). In our branch's first year, 1995, all sightings were west of Stevenage, but there are now clear signs that the butterfly has spread right the way across Hertfordshire, and is consolidating its position: "*The highlight for me was my first sighting of a Marbled White on the old allotment site*" (Jim Fish on 8th July at Bishops Stortford), "*The density of butterflies is as good as you get anywhere with sightings of 2 per minute or greater; often 5 visible at once*" (Jack Harrison at Therfield Heath on July 5th).

Gatekeeper *Pyronia tithonus*

First seen: 21st June at Watford (David Chandler)

Last seen: 13th September at Aldbury Nowers (Martin Hicks)

Peak date: 23rd July

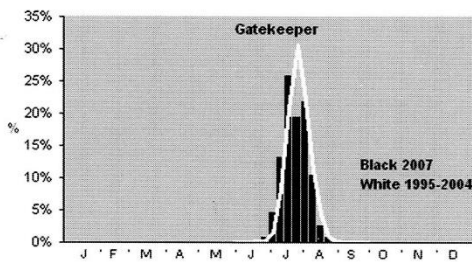
Maximum number seen: 73* at Knebworth on 30th July (Ken King)

Mean index of abundance: 90

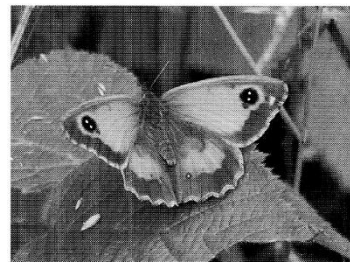
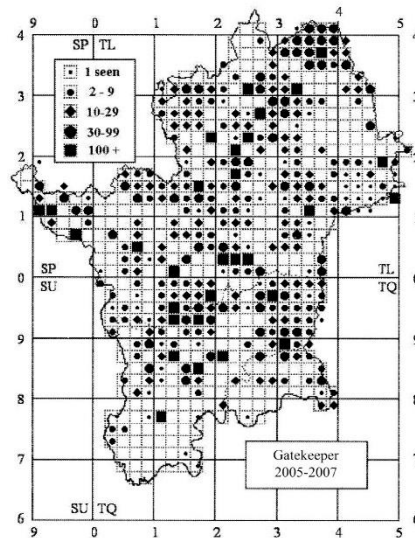
Change in abundance since 2006: 38% decrease

Recorded in: 149 tetrads (47% of those covered)

Range change since 2006: 7% expansion



Unlike the previous two species, the Gatekeeper flight season was not any earlier than average. There is a slight expansion in range as it continues to fill in gaps all over the two counties, but numbers fell significantly. Given the fact that results have shown that this species is particularly affected by both lower summer temperatures and higher summer rainfall (Pollard & Yates 1993), one may hope that numbers will recover if better weather prevails in 2008. The poor weather may also be responsible for a delayed emergence for some individuals which were seen later than usual. Martin Hicks' September 13th sighting was only one day earlier than the latest ever.



Gatekeeper
Photo: Andrew Wood

Meadow Brown *Maniola jurtina*

First seen: 2nd June at Trent Park (Robert Callf)

Last seen: 29th October at Tring Park (Brian Jessop)

Peak date: 11th July

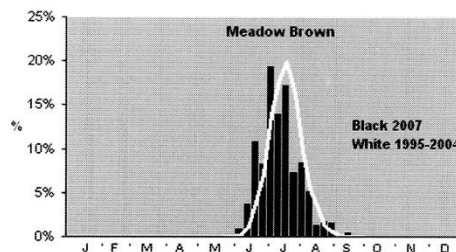
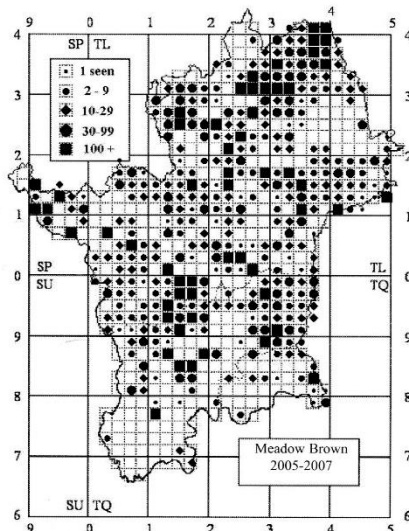
Maximum number seen: 223 at Horsenden Hill on 15th July (Andrew Culshaw)

Mean index of abundance: 203

Change in abundance since 2006: 37% decrease

Recorded in: 162 tetrads (51.3% of those covered)

Range change since 2006: 4% contraction



"Meadow Browns (13 records) had their worst year yet," writes David Bevan of Railway Fields, and many other sites would be inclined to agree with him:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Fryent Country Park:	2829	2427	3159	1121	2261	446	703	3399	1181	1362	1234	270
Gutteridge Wood:	92	51	96	113	62	80	43	169	160	176	137	92
Marshalls Heath:	623	773	597	1561	1038	670	261	446	456	429	648	388
The Warren:	357	237	228	510	231	213	106	208	356	350	227	202

The particularly large drop at Fryent Country Park, previously notable for very high numbers and which in 1991 returned a count of over 5000, is at least partly due to a change in management: "The count for the Meadow Brown was the lowest since the transect commenced in 1986, in part possibly due to the management of the meadows which have been flail-cut only for about three years, rather than having had the hay harvested." (Leslie Williams). The season was earlier than usual, but no records were broken until the following remarkable sighting by Brian Jessop on 29th October at Tring Park: "Went to inspect work being done on the escarpment by Countryside Management. I saw something out of the corner of my eye; I thought it was a leaf at first, but didn't quite seem right. It went into a Hawthorn bush. I investigated and as the sun shone, there was this beautiful female Meadow Brown. It was in perfect condition, with wings open, 6 weeks or more after my last record". This was the latest ever seen in the branch area, being nearly a fortnight later than Malcolm Hull's record of 2005. It is unclear how or why such individuals emerge so late, but P.M.Brakefield & A.M.Emmet, writing in Emmet & Heath (1990), note that quite fresh females sometimes occur in mid-October, and that localities with the longest flight periods include many with shorter turf, especially on chalk soils, all of which apply to Brian Jessop's sighting. The flight period, always long for this species, was a record at just 4 days short of 5 months, not bad for a single generation.

Ringlet *Aphantopus hyperantus*

First seen: 13th June at Waterford (Janet Holmes)

Last seen: 25th August at Waterford (Janet Holmes)

Peak date: 8th July

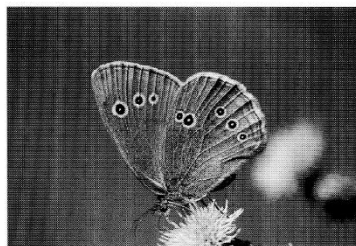
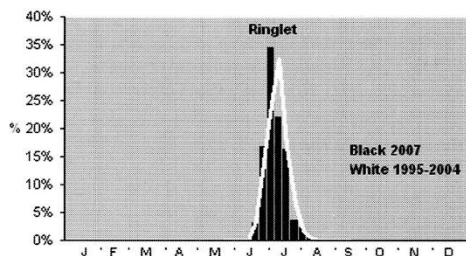
Maximum number seen: 171 at Balls Wood on 8th July (Andrew Wood)

Mean index of abundance: 79

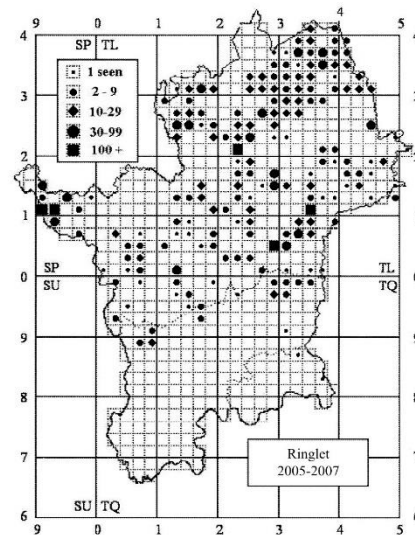
Change in abundance since 2006: 13% decrease

Recorded in: 67 tetrads (21% of those covered)

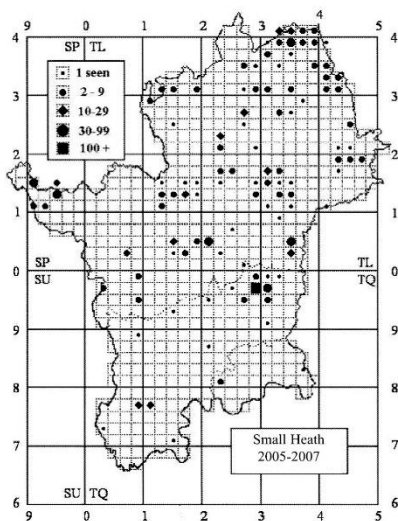
Range change since 2006: 29% contraction



Ringlet
Photo: Clive Burrows



Like the other browns, emergence and peak date were about average for recent years, but overall numbers fell slightly, and individuals lingered unusually late, Janet Holmes' late sighting being two days short of the record. The drop in numbers was less than for others in this group. As Andrew Wood remarks, "This is consistent with the warm spring and this species' liking for damper, more overcast habitats than most of the Browns, conditions that were readily available in 2007" (Wood 2007a). In some areas it has made progress: "The Ringlet colony near Wall Hall appears to have become established" (Michael Kings); and it has reappeared at some sites: "My first ever sighting of a Ringlet in Alexandra Park" (Diane Andrews on 9th July).



Small Heath *Coenonympha pamphilus*

First seen: 18th April at Waterford Heath (Liz Goodyear)

Last seen: 25th September at Poor's Field, Ruislip (Steve Pash)

Peak date: 20th June

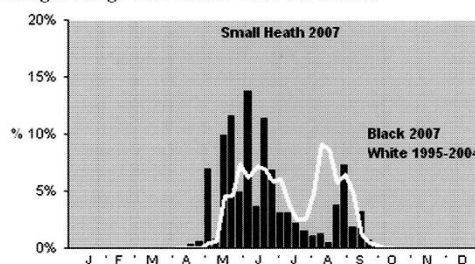
Maximum number seen: 30* at Stevenage on 15th July (Peter Clarke)

Mean index of abundance: 27

Change in abundance since 2006: 25% decrease

Recorded in: 45 tetrads (14.2% of those covered)

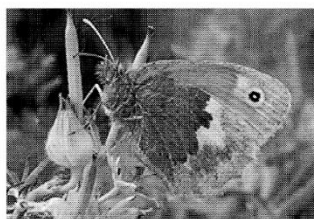
Range change since 2006: 12% contraction



This bivoltine butterfly emerged very early, Liz Goodyear's sighting being the earliest ever by 9 days. This was in the middle of a remarkably hot and dry April however, and the cold wet May meant that numbers kept very low until mid-June, giving the flight diagram an almost trivoltine appearance. However, comparison with the rainfall graph on page 3 shows that the dips in numbers during the first brood largely occur during periods of high rainfall. In the long term, numbers are gradually dropping after a high in 2004, but are still well above the disastrous years of 2000 to 2002:

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Colney Heath:	31	79	26	6	1	0	0	16	54	39	15	12
Danesbury:	0	3	16	9	3	0	0	0	0	4	4	1
Kings Langley:		0	0	3	4	2	1	2	8	1	9	0
The Warren:	473	666	171	118	23	49	83	240	420	304	183	124

There are some areas where it did well: "One at Kings Meads on May 20th, the first for 10 years; today I saw another 4. Not only that, but all 5 were seen on 3 totally different parts of the site. Thoughts of the Small Heath Bus Company" (Alan Reynolds on 22nd May). "4 specimens on 13th June at Oak Hill Park nature reserve meadow, a new site for Small Heath. The grassland is a recent addition to the reserve and is managed to maximize the diversity of wild flowers in the area" (Diane Andrews). This is one of the closest sites to central London for Small Heath, and a good example of what can happen under good management.



Small Heath
Photo: Andrew Wood

Unusual sightings

* Heath Fritillary *Melitaea athalia*

There have been repeated introductions of this species at Park Woods Ruislip since 2004, which are not approved by Butterfly Conservation as the species has never naturally occurred in the area. Reports this year indicate a maximum in single figures.

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How to record butterflies

Butterfly Mapping

Butterfly mapping is probably the most enjoyable form of recording there is. It can only be done in fine, warm weather, and it gets you to different places you would never otherwise think of visiting, and gives you the best opportunity of making important discoveries. There is nothing more satisfying than a long summer's day, a pub lunch and dozens of beautiful butterflies at site after site in far-flung corners of the countryside.

2005 was the first year of a new 5-year project to map the distribution of butterflies in Hertfordshire and Middlesex, in which we shall be concentrating on getting as good a coverage as possible. This means that rather than visiting the same site every week, you should aim to find a new tetrad (2 x 2 km square) each time you record. Borders of tetrads are marked as the even numbered grid lines on Ordnance Survey maps; if you are not sure where tetrad boundaries lie near you then write to John Murray for information. Try and make sure that the places you visit have not been recorded by others. There are already more than 50 transects in which butterflies are recorded every week, so do not visit sites in the same tetrad as these. There is also a map on the website under "mapping challenge" that shows where the unvisited sites are. As soon as all tetrads have been visited, then start going through tetrads again, preferably in a different month of the year from before, or else at a different site in a different 1 km square. Sites can either be visited by car, or another way of doing it is to plan a longer walk that takes you through several different tetrads. Always give the grid reference to at least the nearest 1 km grid square; a six-figure (100 metre) grid reference is best of all. Always start a new column on the recording form each time you cross into a new kilometre square, and note the length of time spent in each. The best time for butterfly mapping is probably a heatwave in July or the first half of August, when you will certainly see the most butterflies, but visits on fine days in April and May are important as well to get the spring species such as Orange Tip.

A single site visit should normally last about half an hour or more in good weather, though if there are dozens of butterflies, 20 minutes will sometimes be enough, then move on to the next tetrad. The butterflies will not come to you, so do not stand still, but take a circular walk around the site, visiting the different likely habitats such as woodland edges or glades, grassland, clumps of wild flowers or overgrown footpaths, or waste land, Buddleia bushes, and gardens in towns, and note the numbers of each species of butterfly that you see. Numbers of each species are easy enough when butterflies are few and far between, but when faced with a field alive with clouds of Meadow Browns and Skippers it's not so easy. When numbers are high it doesn't matter too much if you accidentally leave some out or count some twice; counting is always better than a rough guess. Always make sure of the species; get a good view of the butterfly, preferably settling, before noting it down. Remember that a smallish white butterfly, for example, is not necessarily a Small White, but could also be a Green-veined White, female Orange Tip, or even a small specimen of a Large White. Make sure you record the time you start and end such a walk, to the nearest minute.

Use the recording forms sent out with this report (extra ones can be downloaded from the website at <http://www.hertsmiddx-butterflies.org.uk>). If you are able to help, then please contact John Murray at j.b.murray@open.ac.uk or in the evenings on 01582 833544, who will put you in contact with your local decadal coordinator. Decadal coordinators will be responsible for seeing that each tetrad gets at least one visit per year throughout the project. Mapping records should be sent to John Murray at intervals throughout the year, rather than all at once at the end, so that the workload of entering them onto the database can be spread more evenly.

Transects

Transects should only be carried out by experienced observers who can recognise virtually all butterfly species on the wing. The method consists in walking the same route at least once a week between 1st April and 29th September under standard meteorological conditions of temperature, wind and sunshine, and noting the numbers of each species of butterfly seen within a set distance from the observer, usually 5 metres. This method gives information on the variation in butterfly numbers within the season, and from year to year. It is the main method by which declines in species can be quantified, and as such is extremely important.

A transect walk involves committing an hour or so per week throughout the spring and summer months; if you would like to start one going, write to John Murray for a transect package which includes full instructions and a set of recording forms, or download them from the website at: <http://www.hertsmiddx-butterflies.org.uk>. Select a route near you that takes about 30 minutes to walk when there are no butterflies, as this will expand to more than an hour at the height of summer. The transect should be walked between 10.45 a.m. and 3.45 p.m. when the temperature is above 13°C and the winds below strength 5 (fresh breeze; small trees in leaf begin to sway). When the temperature is between 13°C and 17°C, the transect may be walked if there is at least 60% sunshine. Above 17°C, the transect can be walked in any conditions except rain. There are some weeks, particularly early in the season, when these meteorological conditions cannot be met. Again it is better to walk the transect when it is a bit too cold or too cloudy rather than not to walk it at all, but a careful note of conditions should always be kept.

Butterfly behaviour and casual records

In addition to the records above, don't forget to add notes of any unusual behaviour or other interesting information. This might include observations of early stages, unusual foodplants, species new to your area, trends or changes from previous years, or simply anecdotes that bring life to the report. Finally, I should say that we are pleased to receive records of butterfly sightings from anyone at any time; the *minimum* requirements for a record are:

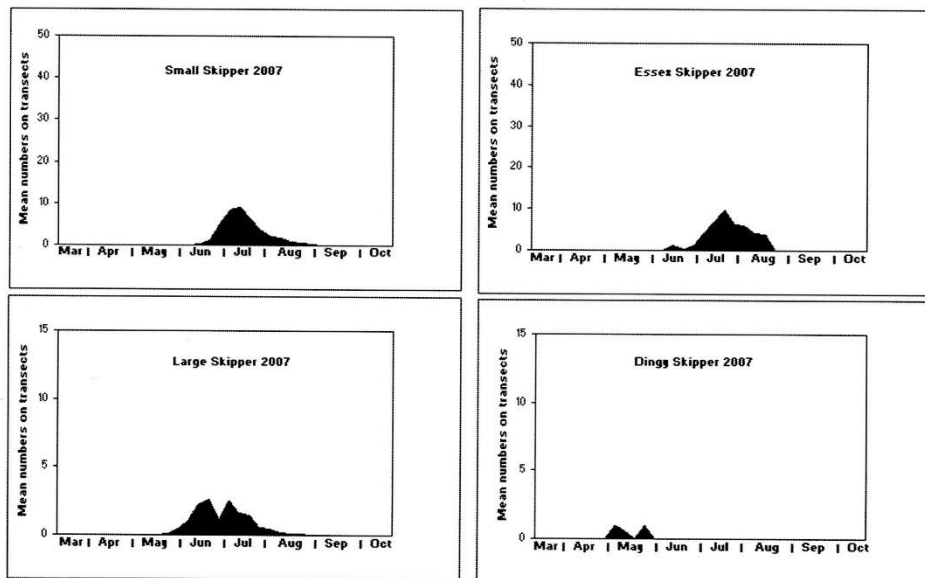
1. butterfly species
2. date seen
3. place seen
4. number seen.

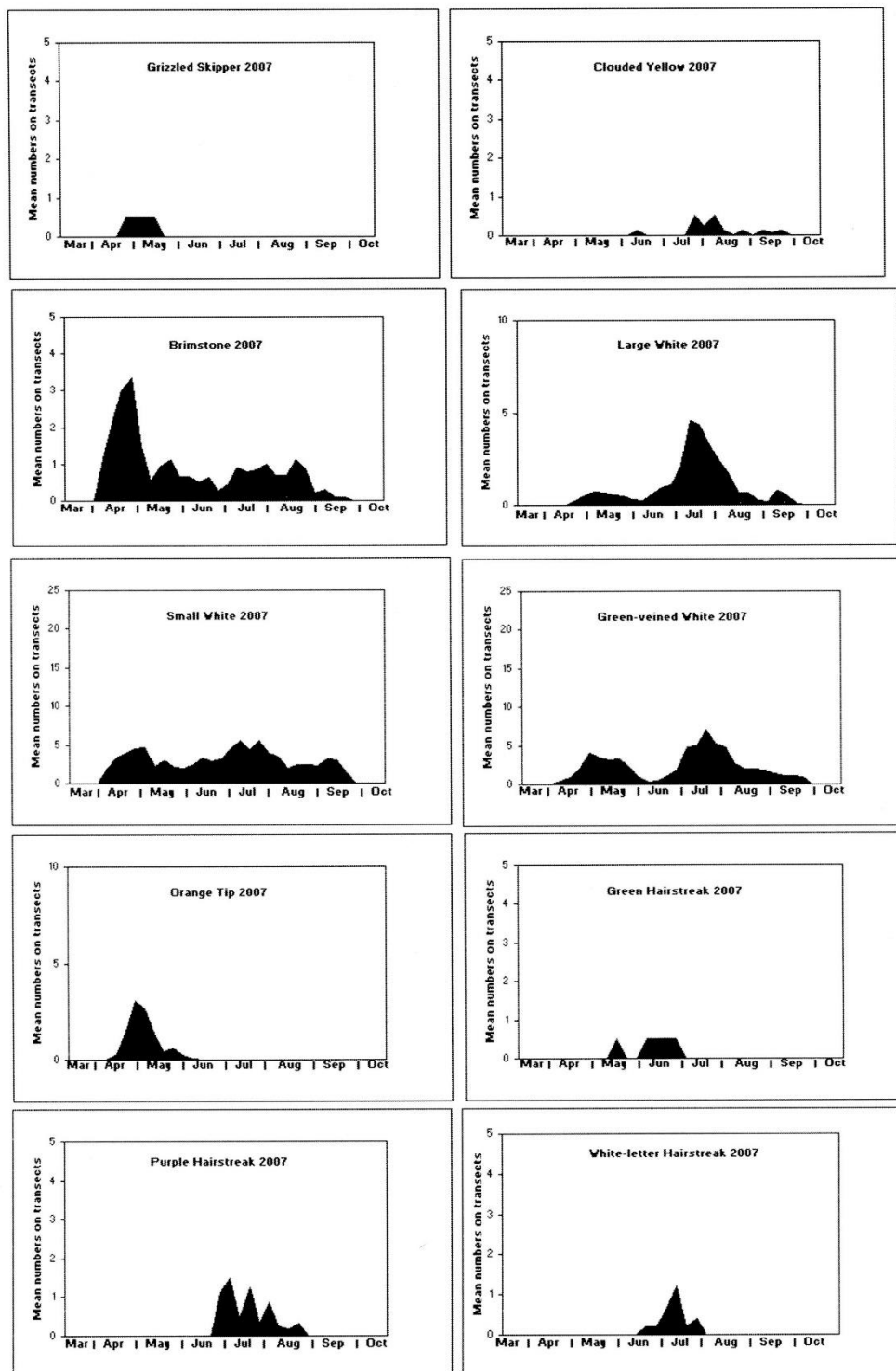
plus of course your name, address and telephone number. If the species is rare, describe as much as you can about the appearance of the butterfly, where you saw it, how it behaved, how you identified it, and if possible get a photograph.

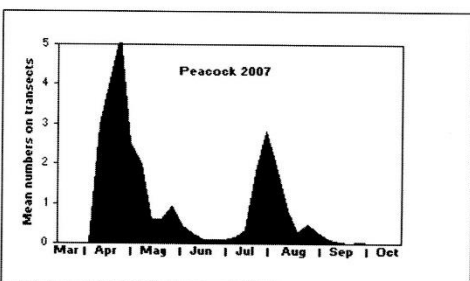
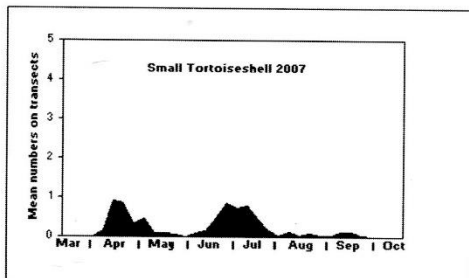
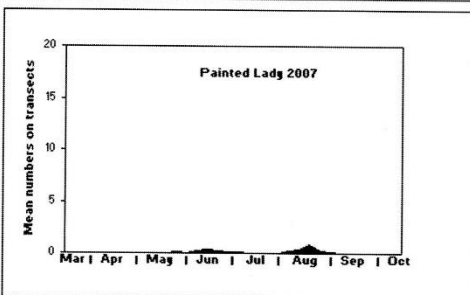
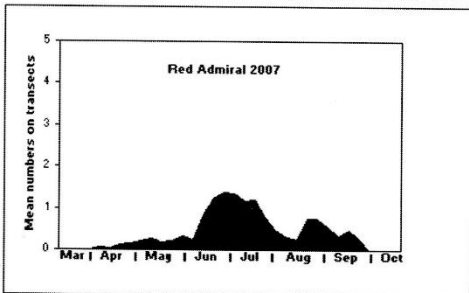
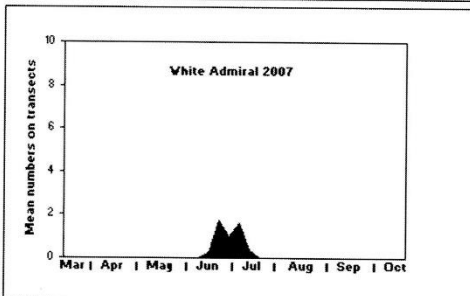
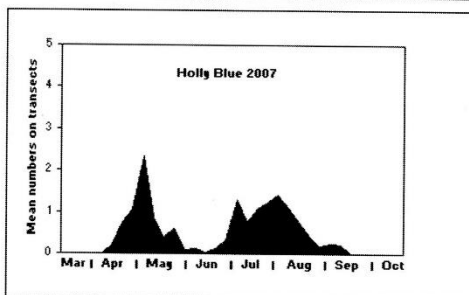
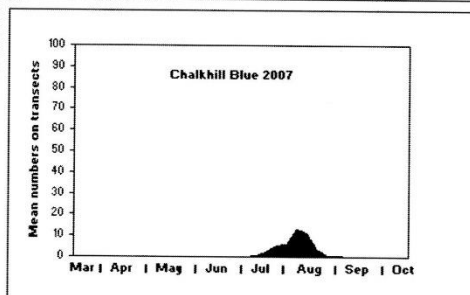
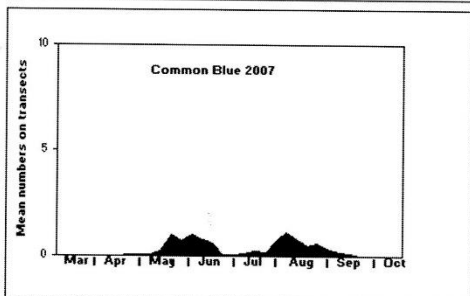
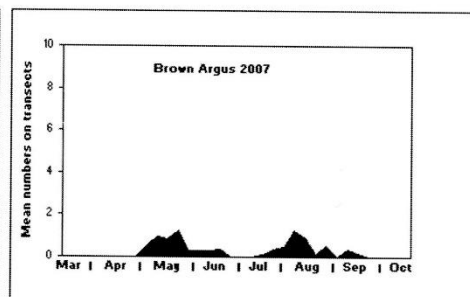
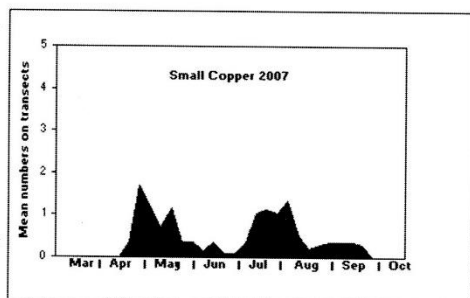
Butterfly records should be sent to John Murray at the address on the back cover before **9th November 2008**:

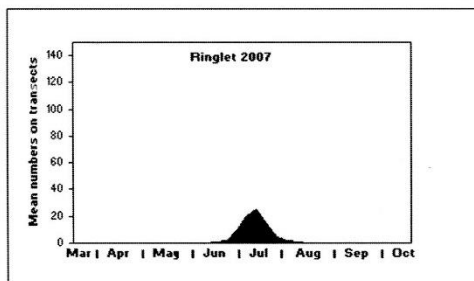
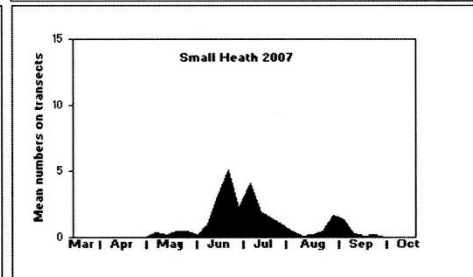
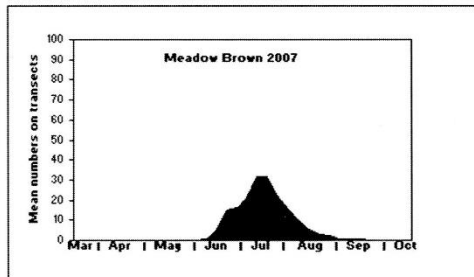
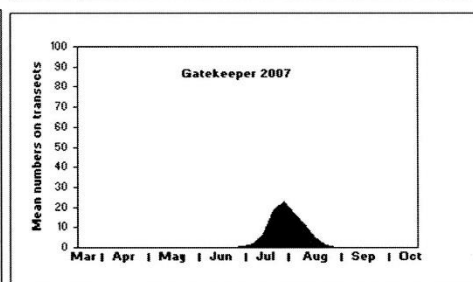
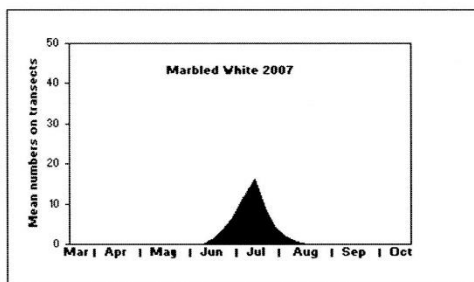
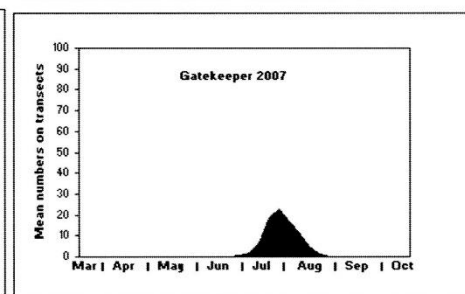
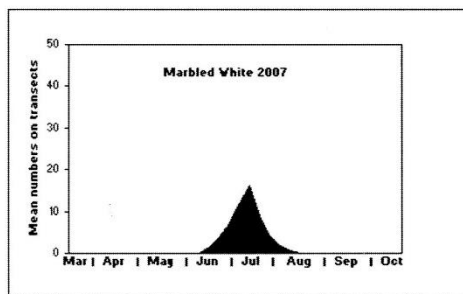
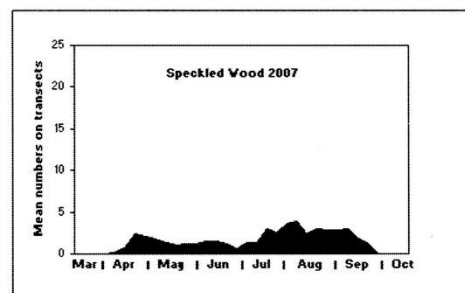
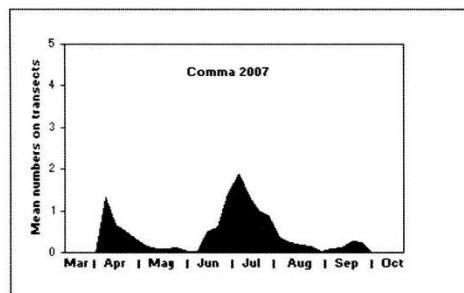
Appendix 1 Flight periods and numbers on Transects

The charts below were shown with the species accounts in previous reports. They plot the mean values for each week of the transect season for each species, that is sufficiently well covered on transects to make such a chart meaningful.









Appendix 2 Detailed Transect Records

The tables below and on the following pages give numbers of butterflies counted on each of the weekly transect walks described in the Transect Roundup, listed by species. Values in *italics* indicate weeks when the transect could not be walked, and are interpolated between numbers counted in the previous and following weeks. Only those transects where there is reasonably complete coverage during the flight season are included. Mean values for all transects are listed along the bottom for each species.

The weeks 1 to 26 listed across the top refer to the 26 weeks starting on April 1st and ending on September 29th. The peak date listed in the final column is the actual date when highest numbers were seen in the case of univoltine species. For bivoltine or trivoltine species the date when the highest numbers for the particular brood that had highest peak values in the mean of all transects is used. The mean peak date for each species at the bottom right is weighted according to the total numbers seen on each transect.

Week Number:	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	Peak
Small Skipper 2007																												
Aldbury Mowers									0	0	0	0	3	9	30	0	3	2	3	2	0	0	0				58	9-Jul
Balls Wood									0	0	0	1	5	5	5	4	2	1	0	0	0	0	0				23	
Beane Hill									0	0	0	3	0	0	0	0	0	0	0	0	0	0	0				3	17-Jun
Bishops Stortford Southern Country Park									0	0	0	0	5	0	18	0	0	0	0	0	0	0	0				29	13-Jul
Brent Reservoir									0	0	0	4	25	34	22	9	4	0	0	0	0	0	0				98	7-Jul
Bricket Wood									0	0	0	0	5	10	16	22	2	3	2	0	0	0	0				60	15-Jul
Fryent Country Park									0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				1	8-Jul
Horsenden Hill East									0	0	0	0	9	19	12	8	2	0	0	0	0	0	0				51	1-Jul
Horsenden Hill West									0	0	0	0	0	1	1	2	0	0	0	0	0	0	0				4	15-Jul
Kenwood									0	0	0	0	0	2	1	4	0	0	0	0	0	0	0				7	15-Jul
Knebworth Park									0	0	0	0	0	0	41	7	0	0	0	0	0	0	0				48	9-Jul
Marshalls Heath									0	0	0	2	9	15	11	21	10	3	2	1	0	0	0				74	21-Jul
Millhoppers									0	0	0	0	2	4	4	7	4	3	2	0	0	0	0				26	18-Jul
Oughtonhead Common									0	0	0	0	0	3	6	0	3	0	0	0	0	0	0				9	13-Jul
Patmore Heath									0	0	0	0	0	10	9	19	16	0	0	0	0	0	0				54	21-Jul
Pervale Wood									0	0	0	1	0	1	0	0	0	0	0	0	0	0	0				2	
Pryor's Wood									0	0	0	0	0	0	2	2	0	0	0	0	0	0	0				4	
Shrubhill Common									0	0	0	1	2	4	7	3	4	0	6	0	0	0	0				27	8-Jul
Stevenage									0	0	0	0	0	45	8	3	2	0	0	0	0	0	0				58	7-Jul
Therfield Heath (Lankester Hill)									0	0	0	0	0	1	6	15	4	10	5	2	2	0	0				44	16-Jul
Therfield Heath (Rifle Range)									0	0	0	0	0	0	0	2	1	1	1	3	0	0	0				8	12-Aug
Therfield Heath (Top of Rifle Range)									0	0	0	0	0	1	2	2	2	0	0	0	0	0	0				9	
Tower Hamlets Cemetery Park									0	0	0	2	6	2	0	1	3	0	0	0	0	0	0				14	29-Jun
Tring Park									0	0	0	0	2	16	0	5	9	7	4	1	2	1	0				47	7-Jul
Ware Park									0	0	0	0	3	4	0	7	0	0	1	0	0	0	0				14	18-Jul
Waterford Heath North									0	0	1	0	0	0	0	1	0	0	0	0	0	0	0				2	
Wood Lane, Pirton									0	0	0	0	0	0	0	2	3	3	0	0	0	0	0				8	
Mean Small Skipper									0.0	0.0	0.2	1.3	5.1	8.4	9.2	6.4	3.7	1.9	1.8	0.9	0.6	0.4	0.0				27.9	12-Jul
Essex Skipper 2007																												
Aldbury Mowers									0	0	0	2	9	3	0	15	10	13	7	0							58	24-Jul
Bishops Stortford Southern Country Park									0	0	0	1	2	11	16	19	3	3	0	0							55	24-Jul
Brent Reservoir									0	0	0	3	2	1	0	0	0	0	0	0							6	27-Jun
Horsenden Hill East									0	0	0	2	3	2	14	2	0	3	0	0							25	15-Jul
Kenwood									0	0	0	0	0	1	7	4	1	0	0	0							13	15-Jul
Knebworth Park									0	0	0	0	0	0	6	22	42	38	15	15	0						138	22-Jul
Marshalls Heath									0	0	0	0	0	10	9	3	1	1	1	0							25	8-Jul
Millhoppers									0	0	0	0	0	0	1	0	0	0	0	0							1	18-Jul
Oughtonhead Common									0	0	2	3	4	0	29	5	4	3	2	0							52	19-Jul
Patmore Heath									0	0	0	0	0	0	0	0	1	0	0	0							1	4-Aug
Pervale Wood									0	0	0	0	0	0	0	2	0	0	0	0							2	22-Jul
Pryor's Wood									0	0	0	0	0	0	4	2	0	0	0	0	0						6	8-Jul
Shrubhill Common									0	0	0	0	0	0	2	12	4	12	0	0							30	
Stevenage									0	0	0	0	9	18	8	3	0	0	0	0	0						38	7-Jul
Therfield Heath (Lankester Hill)									0	0	0	0	0	0	0	1	4	3	0	0	0						8	
Tower Hamlets Cemetery Park									0	5	0	3	20	4	17	0	0	0	0	0							49	7-Jul
Tring Park									0	0	0	0	0	0	48	26	5	4	4	7	0						94	14-Jul
Ware Park									0	0	0	2	4	9	0	0	0	0	0	0	0						15	8-Jul
Mean Essex Skipper									0.0	1.3	0.2	1.9	4.1	6.8	9.9	6.6	6.4	4.2	4.4	0.0							34.1	16-Jul

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak	
Large Skipper 2007																													
Aldbury Noyers							0	0	0	4	3	1	1	8	1	0	2	3	0	0	0	0					23	7-Jul	
Balls Wood							0	0	2	5	5	14	6	14	13	6	0	1	1	1	1	0					68		
Beane Hill							0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0					2	13-Jun	
Bishops Stortford Southern Country Park							0	2	0	3	3	10	1	0	1	0	0	0	0	0	0	0					20	17-Jun	
Bricket Wood							0	0	0	1	2	6	8	9	7	5	0	0	1	0	0	0					39	7-Jul	
Cobsey Heath							0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0					1	24-Jul	
Danesbury Park							0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0					3		
Fryent Country Park							0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0					3	13-Jun	
Gutteridge Wood							0	0	0	0	2	0	1	4	1	0	0	0	0	0	0	0					8	5-Jul	
Horsenden Hill East							0	0	0	1	6	2	1	0	2	2	1	0	0	0	0	0					15	10-Jun	
Horsenden Hill West							0	0	0	0	4	3	2	0	0	0	0	0	0	0	0	0					9	10-Jun	
Hunston Mead							0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0					5		
Kenwood							0	0	0	1	4	4	1	2	1	3	0	1	0	0	0	0					17		
Knebworth Park							0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0					5	9-Jul	
Marshall's Heath							0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0					2	23-Jun	
Milkhoppers							0	0	0	1	2	3	1	14	4	3	0	0	0	0	0	0					28	6-Jul	
Miswell Lane							0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0					2		
Oughtonhead Common							0	0	0	1	1	2	2	1	1	0	0	1	0	0	0	0					8	19-Jun	
Patmore Heath							0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0					4	12-Jun	
Prior's Wood							0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0					4		
Rothamsted Farm							0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0					2	28-Jun	
Shrubhill Common							0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0					1	7-Jul	
Stevenage							0	0	11	11	16	18	11	3	0	0	0	0	0	0	0	0					70	17-Jun	
The Warren							0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0					2	12-Jun	
Therfield Heath (Base of Church Hill)							0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0					2		
Therfield Heath (Lanckester Hill)							0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0					4	19-Jun	
Tower Hamlets Cemetery Park							0	0	0	0	1	4	2	7	2	18	11	5	3	2	1	0					56	18-Jul	
Tring Park							0	0	0	2	3	4	6	3	2	1	0	0	0	0	0	0					21	29-Jun	
Ware Park							0	0	0	2	4	2	2	2	1	0	0	0	0	0	0	0					13	13-Jun	
Wood Lane, Pilton							0	0	0	1	1	0	0	2	7	2	0	0	1	0	0	0					14	9-Jul	
Mean Large Skipper							0.0	0.1	0.5	1.1	2.2	2.6	1.5	2.5	1.7	1.4	0.6	0.5	0.2	0.1	0.1	0.0				14.9	29-Jun		
Week Number:	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	Peak	
Dingy Skipper 2007																													
Aldbury Noyers							0	1	1	0	1	0																3	1-May
Mean Dingy Skipper							0.0	1.0	0.5	0.0	1.0	0.0																2.5	1-May
Week Number:	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	Peak	
Grizzled Skipper 2007																													
Aldbury Noyers							0	1	0	0	0	0																1	28-Apr
Tring Park							0	0	1	1	1	0																2	
Mean Grizzled Skipper							0.0	0.5	0.5	0.5	0.0																	1.5	28-Apr
Week Number:	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	Peak	
Brimstone 2007																													
Aldbury Noyers	0	7	13	10	5	4	2	0	0	0	5	5	4	0	0	1	1	14	21	10	16	22	18	0	3	1	2	163	24-Aug
Balls Wood	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8-Apr
Beane Hill	0	0	5	4	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	11	16-Apr
Bishops Stortford Southern Country Park	0	2	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8-Apr
Bricket Wood	5	2	17	33	0	0	0	6	3	3	2	0	1	1	1	1	0	0	3	1	2	0	0	0	3	2	85	22-Apr	
Danesbury Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25-Aug
Fryent Country Park	0	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	22-Apr
Gunnerbury Triangle	0	2	3	3	2	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
Gutteridge Wood	0	3	1	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	7	8-Apr
Hampstead Heath	0	5	9	2	3	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	23	19-Apr
Horsenden Hill East	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Horsenden Hill West	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1-Apr
Hunston Mead	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	19-Apr
Kenwood	0	0	0	5	1	1	1	4	3	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	0	0	0	20	27-Apr
Kings Langley	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	5-Aug
Knebworth Park	4	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	10	2-Apr
Lemsford Springs	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8-Apr
Mardley Heath	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	5	28-Apr
Marshall's Heath	0	4	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	8	9-Apr
Milkhoppers	0	8	6	6	0	0	0	0	0	0	0	0	0	0	0	1	4	3	1	0	0	0	0	0	0	0	0	29	8-Apr
Miswell Lane	4	3	4	11	2	2	2	2	0	1	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	35	24-Apr
Oughtonhead Common	0	3	12	11	4	7	8	12	4	6	7	6	7	7	3	4	0	2	3	5	7	10	6	1	0	0	0	134	21-Apr
Patmore Heath	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	
Pervase Wood	0	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	8-Apr
Prior's Wood																													

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak
Large White 2007																												
Aldbury Novers	0	0	0	3	2	0	0	0	0	0	0	0	2	5	0	1	3	1	1	0	0	0	0	0	0	0	17	9-Ju
Balls Wood	0	0	0	1	1	10	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	9	2-Ju
Beane Hill	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	5	24-Ju
Bishops Stortford Southern Country Park	0	0	0	1	0	1	2	0	0	0	1	8	2	1	5	9	1	2	0	2	1	0	3	0	0	0	30	24-Ju
Brent Reservoir	0	0	0	0	0	0	0	0	0	1	4	1	4	5	0	3	3	0	0	0	0	0	0	0	0	0	26	30-Ap
Bricket Wood	0	0	1	0	0	0	1	1	0	2	8	13	8	2	1	5	1	0	2	0	0	0	0	0	0	0	44	7-Ju
Colney Heath	0	0	0	2	1	0	0	0	0	1	1	0	3	5	7	3	2	0	0	0	0	0	0	0	0	0	28	18-Ju
Danebury Park	0	0	0	0	1	0	0	0	0	0	2	2	2	1	2	3	0	0	1	0	0	0	0	0	0	0	14	22-Ju
Fryent Country Park	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	6	8-Ju
Gutteridge Wood	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	2	0	0	0	0	0	0	0	0	8	1-Aug
Hampstead Heath	0	0	0	0	2	0	0	0	0	0	1	2	0	1	1	0	3	0	0	0	0	0	0	0	0	0	9	4-Aug
Horsenden Hill East	0	1	0	2	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	7	29-Ap
Horsenden Hill West	0	1	1	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	7	10-Ju
Hunsdon Mead	0	0	0	1	0	0	2	0	0	0	0	0	3	6	10	5	0	0	0	0	0	0	0	0	0	0	27	19-Ju
Kenwood	0	0	0	1	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4	1-Aug
Kings Langley	0	0	0	0	0	0	0	0	2	1	0	0	2	2	3	2	2	0	1	2	0	1	0	0	0	1	21	22-Ju
Knebworth Park	0	1	3	3	5	0	1	0	0	0	0	0	12	2	3	4	2	0	4	3	1	1	1	0	0	0	43	9-Ju
Lemsford Springs	0	0	0	0	0	0	0	0	0	0	0	0	12	8	4	0	3	0	0	0	0	0	0	0	0	0	27	8-Ju
Mardley Heath	0	0	2	0	0	0	0	0	0	0	0	1	1	2	1	0	0	2	1	0	0	0	0	0	0	0	10	4-Aug
Marshall's Heath	0	0	1	0	2	2	1	0	0	0	2	2	1	0	1	1	3	1	1	0	0	1	0	0	0	0	20	23-Ju
Millhoppers	0	0	0	0	1	0	0	0	0	0	0	1	2	3	2	4	3	1	1	1	1	0	0	0	0	0	15	2-Ju
Mixwell Lane	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2	3	1	1	0	0	0	0	0	0	0	0	1	19-Ju
Norhath Great Wood	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	19-Ju
Norhath Great Wood Bridleway	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	4	1-Aug
Oughtonhead Common	0	0	0	0	0	1	0	0	0	1	2	1	0	0	0	1	1	2	2	0	0	0	0	1	1	1	14	7-Ju
Patmore Heath	0	0	0	0	1	2	1	0	0	1	0	0	6	8	3	5	5	3	0	0	1	1	1	0	0	0	38	21-Ju
Pervale Wood	0	0	0	2	0	2	0	1	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	10	1-Aug
Pryor's Wood	0	0	2	0	0	0	0	0	0	0	1	0	0	3	2	3	2	0	0	0	0	0	0	0	0	0	15	2-Aug
Railway Fields	0	0	0	1	1	0	1	0	0	1	1	1	0	1	1	0	1	0	0	2	0	0	1	0	0	0	12	25-Aug
Regents Canal	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1-Aug
Rothamsted Farm	0	0	0	0	1	2	4	0	0	0	1	4	4	3	4	4	13	0	0	0	0	0	0	0	0	0	40	31-Ju
Sherrards Park Reddings	0	0	0	2	7	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	11	10-May
Shrubhill Common	0	0	3	1	0	1	1	0	0	0	0	0	1	2	1	0	7	6	0	0	0	0	0	0	0	0	23	30-Ju
Stevenage	0	0	0	0	0	2	1	0	0	0	0	2	4	4	0	4	2	0	1	1	0	0	0	0	0	0	21	7-Ju
The Warren	0	1	1	1	0	1	0	0	0	1	0	8	15	12	10	3	1	0	0	0	0	0	0	0	0	0	54	13-Ju
Therfield Heath (Base of Church Hill)	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	1	2	0	0	3	1	0	11	11-Sep	
Therfield Heath (Church Hill)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	4	1-Aug	
Therfield Heath (Lankaster Hill)	0	0	0	0	0	0	0	0	0	0	0	0	15	18	15	2	1	0	0	0	1	1	2	0	0	55	16-Ju	
Therfield Heath (Rifle Range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	4	4-Aug	
Therfield Heath (Top of Rifle Range)	0	0	0	0	0	0	0	0	0	1	0	0	0	3	5	4	5	2	0	1	0	0	1	4	0	26	16-Ju	
Tower Hamlets Cemetery Park	0	5	9	4	3	2	5	0	7	13	20	11	23	22	26	22	9	4	8	6	3	0	4	3	0	0	208	18-Ju
Tring Park	0	1	2	5	4	2	0	0	0	0	0	0	0	4	3	2	2	1	1	0	0	0	0	0	0	0	23	2-May
Ware Park	0	0	0	0	0	1	1	0	0	0	0	1	1	0	1	0	0	3	0	1	1	2	2	3	1	0	18	8-Aug
Waterford Heath North	0	0	0	0	0	0	0	0	1	0	1	7	7	13	3	7	7	6	0	5	0	0	0	0	0	0	59	16-Ju
Wood Lane, Pirton	0	0	0	0	0	5	0	2	1	0	1	4	7	35	37	30	5	17	4	0	0	0	15	0	0	0	171	19-Ju
Mean Large White	0.0	0.2	0.5	0.7	0.6	0.5	0.2	0.3	0.2	0.6	1.0	1.1	2.1	4.5	4.3	3.3	2.4	1.6	0.7	0.6	0.2	0.2	0.8	0.5	0.1	0.1	27.5	18-Ju
Week Number:	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	Peak
Small White 2007																												
Aldbury Novers	0	0	0	8	1	1	0	1	0	0	0	0	1	0	0	0	9	6	0	2	4	9	1	6	5	1	55	30-Ap
Balls Wood	0	0	1	0	7	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	11	30-Ap
Beane Hill	0	2	4	2	0	0	0	0	0	0	0	0	0	3	5	7	5	2	0	0	0	0	0	0	1	0	31	22-Ju
Bishops Stortford Southern Country Park	0	0	4	6	7	1	2	3	2	3	0	2	1	22	19	21	23	12	11	4	9	5	3	3	7	169	24-Ju	
Brent Reservoir	0	0	5	0	4	3	1	0	0	1	0	1	1	1	1	1	0	0	1	2	0	0	0	0	0	0	27	24-Ju
Bricket Wood	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	6	28-Ju
Colney Heath	1	1	0	0	6	0	7	1	0	0	1	0	9	0	5	17	7	7	6	0	1	0	1	0	0	0	70	18-Ju
Danebury Park	0	0	0	0	9	3	4	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	1	3	0	2	26	30-Ap
Fryent Country Park	0	1	6	9	0	0	0	0	0	0	0	1	0	16	10	2	6	5	0	0	0	0	0	0	0	0	56	24-Ju
Gunsbury Triangle	3	4	4	7	5	3	2	1	2	3	0	0	0	0	1	2	3	0	0	0	2	0	0	0	0	0	42	28-Ap
Hampstead Heath	0	1	2	1	3	0	5	0	1	0	1	1	1	1	2	3	8	1	2	0	0	0	0	0	0	0	33	30-Ju
Horsenden Hill East	0	0	0	1	3	4	3	0	0	0	0	0	0	3	3	3	0	1	0	1	1	0	1	0	0	0	24	9-May
Horsenden Hill West	0	0	2	1	1	1	2	0	2	0	3	1	2	2	4	4	3	2	1	0	1	1	2	0	0	0	42	22-Ap
Hunsdon Mead	0	0	3	1	3	0	0	0	0	0	1	0	2	2	2	2	2	7	0	0	0	0	0	2	0	0	31	9-Aug
Kings Langley	0	0	0	3	2	1	1	1	0	0	0	1	0	3	3	2	3	5	0	2	2	0	3	2	0	0	38	1-Aug
Knebworth Park	0	0	0	3	7	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	3	24-Ju
Lemsford Springs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	3	1-May
Mardley Heath	0	0	0	0	0	0	1	1	1	1	1	1	3	4	11	7	4	13	3	4	4	3	2	0	0	0	63	30-Ju
Marshall's Heath	0	0	4	2	3	5	4	3	0	0	1	4	4	3	0	0												

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak
Green-veined White 2007																												
Aldbury Movers	0	1	2	0	0	0	0	3	0	0	0	0	0	0	3	4	9	6	4	2	0	0	0	0	0	2	36	24-Jul
Balls Wood	0	0	0	8	4	11	10	1	0	0	0	0	1	2	6	13	0	1	2	1	2	3	1	2	0	1	69	16-Jul
Beane Hill	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	8	30-Apr
Bishops Stortford Southern Country Park	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	3	0	5	0	0	0	0	0	0	0	11	8-Aug
Brent Reservoir	0	0	2	2	3	0	5	10	0	0	2	2	8	7	8	9	4	5	0	0	0	1	0	0	0	0	68	23-May
Bricket Wood	0	0	2	11	0	0	0	2	0	0	0	0	5	9	11	12	2	4	3	2	5	0	0	0	0	0	68	15-Jul
Danesbury Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	2	0	1	0	0	0	0	0	9	22-Jul
Fryent Country Park	0	0	0	1	4	0	0	0	0	0	0	0	0	0	2	5	3	0	1	0	0	0	0	0	0	0	16	21-Jul
Gunnersbury Triangle	0	0	0	0	2	5	2	0	0	0	0	0	8	1	1	2	2	0	0	0	0	0	0	0	0	0	24	7-Jul
Gutteridge Wood	1	1	0	0	1	0	2	1	0	0	0	0	0	3	3	4	1	2	1	0	2	0	1	0	0	0	23	18-Jul
Hampstead Heath	0	1	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
Horsenden Hill East	0	0	1	0	4	8	4	0	0	0	0	0	1	1	3	1	0	0	2	0	0	0	0	0	1	0	26	9-May
Horsenden Hill West	2	1	0	3	2	2	9	0	0	0	0	0	1	1	2	2	1	1	3	0	0	0	0	0	1	0	31	18-May
Kings Langley	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	4	24-May
Knebworth Park	0	7	0	6	2	3	0	0	0	1	3	4	0	0	6	18	14	14	5	9	0	3	5	7	8	8	130	17-Jul
Lemsford Springs	0	0	0	1	0	0	0	1	0	0	0	4	0	0	11	15	18	9	7	1	3	3	1	1	1	1	77	24-Jul
Mardley Heath	1	0	4	17	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	27	28-Apr
Marshall's Heath	0	0	0	0	8	0	0	0	0	0	0	0	2	3	6	10	0	0	3	3	3	3	0	0	0	0	44	21-Jul
Milkhoppers	0	1	0	8	0	0	0	6	2	1	0	0	2	4	7	3	4	6	7	6	3	0	1	1	2	1	65	28-Apr
Miswell Lane	0	0	0	4	3	2	0	1	0	0	0	0	0	1	1	1	2	3	4	2	0	1	1	0	0	0	25	
Northaw Great Wood	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	8	30-Apr
Oughtonhead Common	2	2	6	6	8	7	7	3	2	1	0	0	2	3	3	19	8	12	3	2	1	2	2	2	2	1	104	19-Jul
Palmore Heath	0	0	2	9	0	2	0	2	1	1	0	1	1	12	0	30	37	14	0	0	0	0	4	0	0	0	116	28-Jul
Pervale Wood	0	1	0	2	3	2	2	0	0	0	0	0	1	4	2	2	3	4	3	1	1	0	0	0	0	0	31	
Rothamsted Farm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	4	24-Jul
Sherrards Park Beddings	0	0	0	0	3	12	0	0	0	0	0	0	1	3	4	5	6	4	2	0	0	0	0	0	0	0	40	10-May
Shrubhill Common	0	0	10	13	10	1	4	4	0	0	0	0	0	2	7	5	1	5	3	1	0	0	0	0	0	0	66	28-Apr
Stevenage	0	0	1	7	4	0	2	0	0	0	0	0	1	1	9	3	2	1	0	0	0	0	0	0	1	1	32	14-Jul
Templewood Vale	0	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	5	3	0	0	0	0	1	1	0	0	14	24-Jul
The Warren	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	13	4	11	1	5	10	3	1	0	1	0	54	18-Jul
Therfield Heath (Base of Church Hill)	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	2	0	0	0	0	0	16	5-Aug
Therfield Heath (Lankaster Hill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	29-Jul
Therfield Heath (Top of Rifle Range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	3	2	2	1	0	14	29-Jul
Tower Hamlets Cemetery Park	0	0	15	29	18	21	24	11	11	0	0	7	17	56	53	36	35	41	14	9	10	11	6	3	0	0	427	7-Jul
Tring Park	0	0	0	2	6	3	0	0	0	0	1	1	2	0	6	4	3	3	3	0	6	3	0	1	0	0	39	25-Aug
Ware Park	2	0	4	5	8	2	2	0	0	0	0	0	4	7	0	8	0	0	5	0	0	0	0	0	0	0	46	1-May
Waterford Heath North	0	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	1	1	1	1	0	0	0	0	0	0	9	19-Jun
Wood Lane, Pirton	0	0	0	0	0	0	2	2	1	1	0	0	0	1	1	0	3	2	0	2	0	0	1	0	2	0	18	24-Jul
Mean Green-veined White	0.5	0.9	1.8	4.1	3.6	3.1	3.2	2.2	1.0	0.3	0.4	1.1	2.0	4.7	5.0	7.0	5.2	4.8	2.7	1.9	1.9	1.7	1.4	1.1	1.0	1.0	48.0	10-Jul
Week Number:	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	Peak
Orange Tip 2007																												
Aldbury Movers	0	2	4	1	4	3	1	0	0	0	0	0															15	
Balls Wood	0	0	2	1	5	2	0	0	0	0	0	0															10	30-Apr
Beane Hill	0	0	4	3	1	0	0	1	0	0	0	0															9	16-Apr
Bishops Stortford Southern Country Park	0	0	0	0	3	1	0	0	0	0	0	0															4	29-Apr
Brent Reservoir	0	0	2	0	0	0	0	0	0	0	0	0															2	15-Apr
Bricket Wood	0	0	0	6	0	0	0	0	0	0	0	0															6	22-Apr
Danesbury Park	0	0	0	1	0	0	0	0	0	0	0	0															1	22-Apr
Fryent Country Park	0	0	0	5	3	0	0	1	0	0	0	0															9	22-Apr
Gunnersbury Triangle	0	1	2	1	1	0	0	0	0	0	0	0															5	17-Apr
Gutteridge Wood	0	0	0	0	1	0	0	0	0	0	0	0															1	29-Apr
Hampstead Heath	0	0	0	1	0	0	0	0	0	0	0	0															1	27-Apr
Horsenden Hill East	0	0	1	3	4	1	0	0	0	0	0	0															9	29-Apr
Horsenden Hill West	0	0	1	0	0	2	0	0	0	0	0	0															3	6-May
Hunsdon Mead	0	0	2	1	2	0	0	0	0	0	0	0															5	
Kenwood	0	0	0	0	3	2	0	1	0	0	0	0															6	4-May
Knebworth Park	0	0	2	6	6	3	0	0	0	0	0	0															18	28-Apr
Lemsford Springs	0	0	3	13	13	7	0	4	1	0	0	0															41	26-Apr
Mardley Heath	0	0	1	0	0	0	2	2	1	0	0	0															6	19-May
Marshall's Heath	0	0	1	2	1	4	2	0	0	0	0	0															10	6-May
Milkhoppers	0	0	0	4	0	0	0	6	0	0	0	0															10	20-May
Miswell Lane	0	0	0	2	2	1	0	2	1	0	0	0															8	
Oughtonhead Common	0	1	5	6	2	1	1	4	3	2	0	0															25	28-Apr
Palmore Heath	0	0	0	2	0	0	0	0	0	0	0	0															2	22-Apr
Pervale Wood	0	0	1	9	4	1	1	0	0	0	0	0															16	22-Apr
Prior's Wood	0	0	0	0	0	1	1	1	0	0	0	0															2	
Rothamsted Farm	0	0	0	0	1	1	1	0	0	0	0	0															3	
Sherrards Park Beddings	0																											

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak
Green Hairstreak 2007																												
Wood Lane, Pirton					0	1	0																				1	
Mean Green Hairstreak					0.0	1.0	0.0																				1.0	
Week Number:	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	Peak
Purple Hairstreak 2007																												
Brent Reservoir												0	7	2	0	3	0	0	0	0	0	0					12	27-Jun
Bricket Wood												0	2	3	2	0	0	0	0	0	0	0					6	7-Jul
Colney Heath												0	0	0	0	3	0	1	0	0	0	0					4	18-Jul
Gutteridge Wood												0	0	0	0	2	0	0	0	0	0	0					2	18-Jul
Horsenden Hill East												0	5	9	1	0	1	1	0	0	0	0					17	1-Jul
Horsenden Hill West												0	1	1	1	1	0	0	0	0	0	0					4	
Kenwood												0	0	1	1	3	1	7	1	1	2	0					17	31-Jul
Mardley Heath												0	0	0	0	0	0	1	0	0	0	0					1	
Marshalls Heath												0	0	0	0	1	2	0	0	1	2	0					6	
Patmore Heath												0	0	0	0	1	0	1	0	0	0	0					2	
Pervale Wood												0	0	1	1	0	0	0	1	0	0	0					3	
Sherrards Park Reddings												0	0	0	0	1	0	1	1	0	0	0					3	
Tower Hamlets Cemetery Park												0	0	1	0	0	0	0	0	0	0	0					1	7-Jul
Mean Purple Hairstreak												0.0	1.1	1.5	0.5	1.3	0.3	0.9	0.3	0.2	0.3	0.0					1.0	11-Jul
Week Number:	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	Peak
White-letter Hairstreak 2007																												
Horsenden Hill East												0	1	0	2	3	0	0	0								6	1-Jul
Knebworth Park												0	0	0	0	1	0	0									1	9-Jul
Marshalls Heath												0	0	0	1	1	0	2	0								4	21-Jul
Pervale Wood												0	0	0	0	1	0	0	0								1	1-Jul
Ware Park												0	0	1	1	1	0	0	0								3	
Mean White-letter Hairstreak												0.0	0.2	0.2	0.6	1.2	0.2	0.4	0.0								2.8	8-Jul
Week Number:	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	Peak
Small Copper 2007																												
Aldbury Nowers				0	0	4	2	0	3	0	0	0	0	0	0	0	2	2	3	2	0	1	1	0	1	1	22	1-May
Bishops Stortford Southern Country Park				0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	18-May
Brent Reservoir				0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	0	5	
Bricket Wood				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1-Aug
Colney Heath				0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	10-Aug
Danesbury Park				0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	5	
Hampstead Heath				0	1	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	7	19-Jun
Horsenden Hill East				0	0	1	7	3	1	0	0	1	1	1	0	1	3	6	1	3	1	1	0	1	0	0	31	9-May
Horsenden Hill West				0	1	4	10	4	5	0	0	0	0	0	0	1	1	5	6	3	2	0	0	0	0	0	42	6-May
Hunsdon Mead				0	5	18	2	7	11	2	4	0	1	0	0	0	7	5	2	3	0	0	0	0	0	0	66	30-Apr
Kenwood				0	0	0	0	0	0	0	0	0	0	2	4	5	0	7	1	0	0	0	0	1	0	0	20	31-Jul
Knebworth Park				0	0	0	0	0	3	2	1	0	0	0	1	1	4	0	1	1	1	1	1	0	0	0	20	22-Jul
Mardley Heath				0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	30-Jul
Marshalls Heath				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	
Millhoppers				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	17-Aug
Patmore Heath				0	0	0	1	0	1	0	1	0	0	0	0	1	5	1	2	1	0	2	3	3	4	2	27	28-Jul
Pervale Wood				0	0	4	2	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	11	29-Apr
Shrubhill Common				0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
The Warren				0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	2	2	13	10-Sep
Tower Hamlets Cemetery Park				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	29-Sep
Tring Park				0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
Mean Small Copper				0.0	0.4	1.7	1.2	0.8	1.2	0.4	0.4	0.2	0.4	0.1	0.1	0.4	1.1	1.1	1.1	1.4	0.5	0.2	0.3	0.4	0.4	0.3	14.0	4-May
Week Number:	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	Peak
Brown Argus 2007																												
Aldbury Nowers				0	2	1	0	3	0	1	1	0	0	0	0	0	1	0	5	3	1	5	0	4	2	0	29	
Bishops Stortford Southern Country Park				0	1	0	3	6	0	0	0	0	0	0	0	0	3	3	4	2	0	0	0	0	0	0	22	22-May
Horsenden Hill West				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	12-Aug
Patmore Heath				0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	0	1	0	0	0	0	6	17-Jun
Therfield Heath (Base of Church Hill)				0	2	8	4	3	2	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	23	9-May
Therfield Heath (Church Hill)				0	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Therfield Heath (Lanckester Hill)				0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10-Jun
Therfield Heath (Rifle Range)				0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5-Jun
Therfield Heath (Top of Rifle Range)				0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	1	2	0	0	0	0	0	0	7	19-Jun
Tring Park				0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Ware Park				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	8-Aug
Mean Brown Argus				0.0	0.5	1.0	0.8	1.3	0.3	0.3	0.3	0.4	0.0	0.0	0.0	0.1	0.4	0.5	1.3	0.9	0.1	0.5	0.0	0.4	0.2	0.0	9.0	20-May

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak
Common Blue 2007																												
Aldbury Nowers				0	0	0	0	1	0	1	2	2	1	0	0	0	0	0	4	3	1	5	3	3	3	0	28	28-Aug
Bishops Stortford Southern Country Park				0	0	0	0	1	4	4	2	1	0	0	1	0	2	2	2	2	4	1	0	0	0	0	26	2-Jun
Brent Reservoir				0	0	0	0	5	0	0	2	1	1	0	0	0	2	2	1	1	0	0	0	0	0	0	15	23-May
Colney Heath				0	0	0	0	2	0	0	0	0	0	0	0	2	0	1	1	1	1	2	0	0	0	0	10	23-May
Fryent Country Park				0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2-Jun
Gutteridge Wood				0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	14-Jul
Horsenden Hill East				0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	
Horsenden Hill West				0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	29-Jul
Hunsdon Mead				0	0	6	11	2	3	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	25	22-May
Kings Langley				0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	15-Jul
Knebworth Park				0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	2	30-Jul
Lemsford Springs				0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-Jul
Marshall's Heath				0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	4-Aug
Oughtonhead Common				0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	1	1	0	0	6	3-Aug
Patmore Heath				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	4	11-Aug
Pervale Wood				0	1	0	0	2	5	4	1	1	0	0	0	1	1	2	0	0	0	0	0	0	0	0	18	2-Jun
Regents Canal				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Shrubhill Common				0	0	0	0	0	3	3	1	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	10	29-May
Stevenage				0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	21-Jul
Templewood Vale				0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6-Jun
The Warren				0	0	0	6	0	0	2	0	0	0	0	0	0	0	5	7	1	0	0	0	0	0	0	21	10-Aug
Therfield Heath (Base of Church Hill)				0	0	0	0	1	1	1	3	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	9	20-Jun
Therfield Heath (Church Hill)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	12-Aug
Therfield Heath (Lanckester Hill)				0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	5-Jun
Therfield Heath (Rifle Range)				0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	5	31-May
Therfield Heath (Top of Rifle Range)				0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	5	5	6	6	6	1	0	0	33	25-Aug
Tower Hamlets Cemetery Park				0	0	0	0	0	2	5	4	2	0	0	0	0	0	1	5	3	2	0	0	0	0	0	24	7-Jun
Tring Park				1	1	1	1	1	6	4	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	19	9-Jun
Ware Park				0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Waterford Heath North				0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	1	0	0	0	0	6	
Mean Common Blue				0.0	0.1	0.0	0.2	1.0	0.7	1.0	0.8	0.6	0.1	0.0	0.1	0.3	0.2	0.7	1.1	0.8	0.5	0.6	0.3	0.2	0.1	0.0	9.4	30-Jul
Chalkhill Blue 2007																												
Therfield Heath (Base of Church Hill)															0	0	0	2	0	10	0	0	0	0	0	0	12	5-Aug
Therfield Heath (Church Hill)															0	0	0	1	1	5	6	1	0	0	0	0	14	12-Aug
Therfield Heath (Lanckester Hill)															0	0	0	2	6	8	2	2	0	0	0	0	20	5-Aug
Therfield Heath (Rifle Range)															0	0	4	5	6	9	7	1	1	0	0	0	33	5-Aug
Therfield Heath (Top of Rifle Range)															0	5	9	23	23	47	53	17	4	3	0	184	12-Aug	
Wood Lane, Pirton															0	0	1	0	0	0	0	0	0	0	0	0	1	19-Jul
Mean Chalkhill Blue															0.0	0.8	2.3	5.5	6.0	13.2	11.3	3.5	0.8	0.5	0.0	0.0	44.0	10-Aug
Holly Blue 2007																												
Aldbury Nowers				0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1-May
Balls Wood				0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23-May
Beane Hill				0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	30-Apr
Bishops Stortford Southern Country Park				0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	16-Apr
Brent Reservoir				0	0	0	2	2	0	0	3	0	0	0	0	0	1	0	2	0	0	1	0	0	0	0	11	23-May
Bricket Wood				0	0	2	2	1	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	11	
Colney Heath				0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-Jun
Danebury Park				0	0	0	0	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	30-Apr
Fryent Country Park				0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	
Gunnersbury Triangle				0	3	5	3	4	5	4	2	1	0	0	8	2	4	6	8	0	0	0	0	0	0	0	56	7-Jul
Gutteridge Wood				0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	7	
Hampstead Heath				0	0	0	1	0	0	1	0	0	0	0	1	1	2	2	1	0	1	1	0	0	0	0	11	
Horsenden Hill East				0	0	0	1	2	1	1	0	0	1	0	0	0	0	1	0	2	0	0	0	0	0	0	9	
Horsenden Hill West				0	0	0	1	4	1	0	1	0	0	0	1	1	0	0	0	1	0	1	1	2	0	0	13	29-Apr
Kenwood				0	0	1	2	8	4	0	3	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	21	4-May
Kings Langley				0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	
Knebworth Park				0	0	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	10	21-Apr
Mardley Heath				0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	3	
Marshall's Heath				0	0	2	3	0	1	1	0	0	0	0	1	2	3	1	2	6	4	1	0	0	0	0	29	8-Aug
Milkoppers				0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	20-May
Minwell Lane				0	0	0	2	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	4	24-Apr
Oughtonhead Common				0	0	2	4	1	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	1	1	0	13	28-Apr
Pervale Wood				0	0	2	0	1	0	1	0	0	0	0	1	5	1	0	1	4	2	0	0	0	0	0	18	1-Jul
Railway Fields				0	0	0	0	0	0	1	0	0	0	1	1	3	4	1	1	0	0	0	1	0	0	0	13	13-Jul
Regents Canal				0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Rothamsted Farm				0	0	0	0	1	1	0	1																	

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak	
White Admiral 2007																													
Balls Wood											0	1	3	1	5	1	0											11	1-Jul
Bricket Wood											0	0	3	2	1	1	0											7	17-Jun
Northave Great Wood											0	0	1	0	0	0	0											1	20-Jun
Northave Great Wood Bridleway											0	0	0	1	1	0	0											2	
Mean White Admiral											0.0	0.3	1.8	1.0	1.6	0.4	0.0											5.0	25-Jun
Week Number:	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	Peak	
Purple Emperor 2007																													
Kings Langley															0	1	0											1	8-Jul
Mean Purple Emperor															0.0	1.0	0.0											1.0	8-Jul
Week Number:	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	Peak	
Red Admiral 2007																													
Aldbury Novert	0	0	0	0	0	0	0	1	0	0	1	2	1	2	1	1	1	0	0	2	3	2	0	0	0	1	18	24-Aug	
Balls Wood	0	0	0	0	0	0	0	0	0	0	0	2	1	4	0	2	1	1	0	0	0	0	1	1	0	0	13	1-Jul	
Beane Hill	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	3		
Bishops Stortford Southern Country Park	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	1	0	0	0	1	0	0	0	6	17-Jun	
Brent Reservoir	0	0	0	0	2	0	0	0	0	1	1	4	2	1	2	0	0	0	0	0	0	1	0	0	0	0	14	27-Jun	
Bricket Wood	0	0	0	0	0	0	1	1	0	0	0	2	3	3	3	3	0	1	0	1	1	0	0	0	1	0	19		
Colney Heath	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3	29-Jun	
Danesbury Park	0	0	0	0	0	0	1	0	0	0	0	3	2	0	0	0	0	0	1	1	0	0	0	0	0	0	8	19-Jun	
Fryent Country Park	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	8-Jul	
Gunnery Triangle	0	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	7		
Hamstead Heath	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	3		
Hampstead Heath	0	0	0	0	0	0	0	3	1	5	2	3	3	2	0	1	0	0	1	1	0	0	0	0	0	0	22	13-Jun	
Horsenden Hill East	1	0	0	0	1	0	0	0	0	0	0	1	2	3	0	0	0	1	0	0	0	0	0	0	0	0	9	1-Jul	
Horsenden Hill West	1	0	0	0	1	0	0	0	0	0	0	0	1	2	0	2	0	0	0	0	0	0	0	0	1	0	8		
Hunsdon Mead	0	0	1	0	0	0	1	1	0	0	1	0	1	1	2	2	2	0	0	0	0	2	0	0	0	0	14		
Kewwood	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	13-Jun	
Kings Langley	0	0	0	0	0	0	0	3	0	0	2	0	0	4	1	3	2	0	0	0	0	0	0	1	0	0	16	8-Jul	
Knebworth Park	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4	3	0	0	0	3	4	5	2	2	1	30	4-Sep		
Lemsford Springs	0	1	0	1	0	0	0	0	0	2	4	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	12	23-Jun	
Marley Heath	0	0	0	0	0	0	1	1	0	2	3	3	3	0	0	0	1	0	0	0	0	0	0	0	0	0	13		
Marshall's Heath	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	4	0	0	0	0	1	0	0	0	0	0	11	28-Jul	
Millhoppers	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	1	0	0	1	2	1	0	1	1	1	12		
Muswell Lane	0	0	0	0	0	0	0	1	0	2	4	2	1	3	4	3	2	0	0	0	1	1	0	0	0	0	23		
Northave Great Wood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	2		
Northave Great Wood Bridleway	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	9	20-Jun	
Oughtonhead Common	0	0	0	0	0	0	0	0	0	1	2	4	3	2	0	0	2	0	1	2	3	2	0	0	0	0	22	19-Jun	
Palmers Heath	0	0	0	0	0	1	1	0	0	4	2	5	6	5	1	2	2	2	2	1	1	0	1	3	0	39	7-Jul		
Perrins Wood	0	0	0	0	0	1	0	1	0	1	0	0	0	3	0	0	0	0	0	1	1	0	0	0	2	10	8-Jul		
Pryor's Wood	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	3	25-Aug		
Railway Fields	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	6	30-Apr	
Rothamsted Farm	0	0	0	0	0	0	0	1	1	1	4	3	2	1	2	1	0	0	0	0	0	0	0	0	0	0	16	28-Jun	
Sherrards Park Beddings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	11-Sep		
Shrubhill Common	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3		
Stevensage	0	0	1	1	0	0	0	1	0	0	0	1	1	0	2	0	0	0	1	1	0	0	0	0	0	0	8	21-Jul	
Templewood Vale	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	0	0	4	23-Jun		
The Warren	0	0	0	0	0	1	0	0	0	0	0	2	3	0	0	0	0	0	0	2	0	0	0	0	0	0	8	4-Jul	
Therfield Heath (Base of Church Hill)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25-Apr		
Therfield Heath (Lankesier Hill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2		
Tower Hamlets Cemetery Park	0	0	1	1	6	5	4	3	3	3	3	6	6	2	7	4	2	4	2	3	4	4	2	5	0	83	18-Jul		
Tring Park	0	0	0	0	0	1	0	0	0	0	0	6	4	1	2	2	1	0	0	5	3	0	2	0	0	0	26	29-Jun	
Ware Park	0	0	2	0	0	0	0	2	0	2	8	5	1	5	4	0	0	1	0	5	9	5	3	5	4	60	29-Aug		
Waterford Heath North	0	0	0	0	0	0	0	0	0	4	1	1	2	4	2	0	0	0	0	0	0	0	0	0	0	0	14		
Wood Lane, Pirton	0	0	1	1	0	0	0	0	0	0	1	3	2	2	1	0	2	0	0	0	0	1	0	1	2	18	6-Jul		
Mean Red Admiral	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.2	0.8	1.2	1.4	1.3	1.2	1.2	0.8	0.5	0.3	0.3	0.7	0.8	0.5	0.3	0.5	0.3	14.0	5-Jul		
Week Number:	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	Peak	
Painted Lady 2007																													
Aldbury Novert	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	5	28-Aug	
Balls Wood	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10-Jun	
Beane Hill	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	16-Apr	
Bishops Stortford Southern Country Park	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	2	8	0	0	0	0	0	0	15	25-Aug	
Brent Reservoir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	25-Aug	
Bricket Wood	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10-Jun	
Colney Heath	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	25-Aug	
Danesbury Park	0	0																											

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

Week Number:	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	Peak		
Small Tortoiseshell 2007																														
Aldbury Novers	0	1	2	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	0	2	2	1		12		
Bishops Stortford Southern Country Park	0	0	2	0	1	0	0	0	0	0	1	3	1	3	0	4	0	0	0	0	0	0	0	0	0	0		15	18-Jul	
Bricket Wood	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0		3	17-Jun	
Colney Heath	1	2	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0		7	10-Apr	
Danesbury Park	0	3	0	0	1	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0		9	9-Apr	
Gunnersbury Triangle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		1	7-Jul	
Kenwood	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0		2		
Kings Langley	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0		4	22-Jul
Knebworth Park	0	4	3	1	1	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0		19	9-Jul	
Lemsford Springs	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0		4	2-Apr	
Miswell Lane	0	1	3	5	4	2	0	1	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	1	1	0		23	24-Apr	
Northaw Great Wood Brilleyway	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2		
Oughtonhead Common	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0		4	14-Apr	
Patmore Heath	0	1	0	0	0	0	0	0	0	1	0	1	2	3	1	0	0	0	0	0	0	0	0	0	0	0		9	7-Jul	
Railway Fields	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	12-Jun	
Rothamsted Farm	0	0	2	0	1	1	0	0	0	1	1	3	2	1	2	0	1	2	0	0	0	0	0	0	0	0		17	28-Jun	
Strubhill Common	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	12-Apr	
Templewood Vale	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	8-Apr	
The Warren	0	0	0	0	2	0	1	0	0	0	0	0	0	6	0	6	1	1	0	0	0	0	0	0	0	0		17		
Therfield Heath (Church Hill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0		1	5-Aug	
Therfield Heath (Lankester Hill)	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0		8	16-Apr	
Therfield Heath (Top of Rifle Range)	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		1	1-Jul	
Tring Park	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0		3	1-Apr	
Ware Park	0	0	1	1	0	0	1	1	0	0	0	0	0	2	3	2	0	0	0	0	0	0	0	0	0	0		10	3-Jul	
Waterford Heath North	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0		2		
Wood Lane, Pirton	0	6	4	2	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0		16	14-Apr	
Mean Small Tortoiseshell	0.2	0.9	0.8	0.3	0.5	0.1	0.1	0.1	0.0	0.1	0.1	0.5	0.8	0.7	0.8	0.4	0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0		7.3	15-Apr	
Week Number:	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	Peak		
Peacock 2007																														
Aldbury Novers	10	12	14	7	4	2	0	4	0	1	1	0	0	0	0	3	8	6	6	5	3	4	0	0	0	0		89	15-Apr	
Balls Wood	10	7	29	8	10	2	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	1		72	16-Apr	
Beane Hill	4	5	11	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0		27	16-Apr	
Bishops Stortford Southern Country Park	1	3	6	5	3	1	0	4	0	0	0	0	0	0	0	9	16	16	3	0	0	0	0	0	0	0		67	24-Jul	
Brent Reservoir	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0		12	15-Apr	
Bricket Wood	1	6	23	4	1	0	2	1	0	0	0	0	0	1	5	8	17	5	1	1	1	0	0	0	0	0		77	15-Apr	
Colney Heath	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0		8	18-Jul	
Danesbury Park	2	1	2	0	0	0	0	0	1	1	0	0	1	2	0	0	0	0	1	0	0	0	0	0	0	0		11		
Fryent Country Park	3	9	8	8	2	0	0	3	3	0	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0		41	8-Apr	
Gunnersbury Triangle	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0		4		
Glutteridge Wood	2	2	4	3	5	0	1	2	1	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0		24	29-Apr	
Hampstead Heath	0	3	6	0	1	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		14	19-Apr	
Horsenden Hill East	2	3	5	3	3	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		19	15-Apr	
Horsenden Hill West	3	6	5	9	5	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		32	22-Apr	
Hunsdon Mead	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0		9	11-Apr	
Kenwood	0	0	2	2	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0		8		
Kings Langley	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	2	3	0	0	0	0	0	0	0		13	22-Jul	
Knebworth Park	5	14	9	10	8	4	0	0	1	2	2	0	0	0	0	0	3	5	3	2	0	0	0	0	0	0		89	8-Apr	
Lemsford Springs	6	2	3	1	1	0	0	2	0	1	0	0	0	0	0	0	3	5	3	2	0	0	0	0	0	0		29	2-Apr	
Mardley Heath	17	13	3	5	0	0	1	1	0	0	0	0	0	0	0	4	7	3	1	1	1	0	0	0	0	0		56	06-Apr	
Marshall's Heath	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	2	1	0	0	0	0		15	1-Apr	
Millhoppers	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0		10	8-Apr	
Miswell Lane	3	4	6	8	2	1	0	0	3	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0		33	24-Apr	
Northaw Great Wood	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0		8		
Northaw Great Wood Brilleyway	2	0	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7	20-Apr	
Oughtonhead Common	4	3	4	6	0	1	1	0	0	0	0	0	0	0	0	1	3	2	1	2	2	1	1	1	0	0		33	28-Apr	
Patmore Heath	1	4	1	1	0	0	0	1	0	0	0	0	0	0	0	1	6	2	2	0	1	1	0	0	0	0		21	21-Jul	
Pervale Wood	4	7	6	5	6	0	0	1	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0		33	8-Apr	
Fryer's Wood	0	7	5	2	0	1	2	2	1	0	0	0	0	0	0	0	2	3	2	0	1	0	0	0	0	0		27	8-Apr	
Railway Fields	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1	2-Apr	
Rothamsted Farm	1	4	4	1	2	1	0	0	0	0	0	0	0	0	0	2	4	3	1	0	0	0	0	0	0	0		23		
Sherrards Park Beddings	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0		8	14-Apr	
Shrubhill Common	11	17	11	1	4	0	0	0	2	0	0	0	0	0	0	1	2	5	0	0	1	0	0	0	0	0		55	12-Apr	
Stevensage	15	5	3	3	2	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0		29	6-Apr	
Templewood Vale	7	5	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0		20	2-Apr	
The Warren	3	5	6	0	1	0	6	4	0	0	0	0	0	0	0	5	4	2	1	1	0	1	0	0	0	0		39	17-Apr	
Therfield Heath (Base of Church Hill)	2	6	2	0	3	0	0	0	0	0	0	0	0	0	0															

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

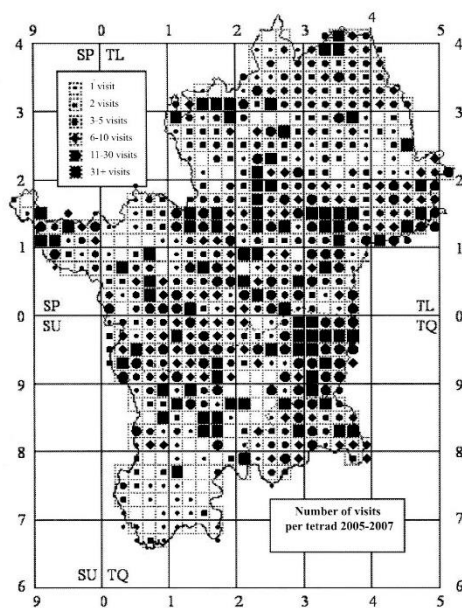
Week Number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	Peak	
Comma 2007																													
Aldbury Movers	0	1	1	1	2	1	0	0	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	10	1-May	
Balls Wood	8	3	0	3	1	0	0	0	0	0	1	1	6	3	4	0	0	0	0	0	0	0	1	0	0	0	32	2-Apr	
Buene Hill	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	7-Apr	
Brent Reservoir	0	0	1	0	0	0	0	0	0	0	3	5	0	2	0	0	1	0	0	0	0	0	0	0	0	0	14	17-Jun	
Colney Heath	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	19-Jun	
Danebury Park	1	0	0	0	0	0	0	0	0	0	0	0	1	2	4	2	1	0	0	0	0	0	0	0	0	0	11	8-Jul	
Fryent Country Park	1	1	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	16-Apr	
Gunnerbury Triangle	0	1	2	1	1	0	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	13	17-Apr	
Gutteridge Wood	3	1	0	0	1	0	0	0	0	0	0	0	0	1	3	2	2	0	0	0	0	0	0	0	0	0	13		
Hampstead Heath	0	0	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	1	2	1	0	0	0	0	0	8	22-May	
Horsenden Hill East	2	1	0	1	0	0	0	0	0	0	3	0	3	5	0	0	0	0	0	0	0	0	0	0	0	0	15	1-Jul	
Horsenden Hill West	2	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	10	1-Jul	
Hunsdon Mead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	3		
Kenwood	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	1	0	4	9-Jul	
Kings Langley	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2		
Knobworth Park	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	8		
Lemsford Springs	1	1	0	0	0	0	0	0	0	0	0	0	0	2	4	5	3	1	0	0	0	0	1	1	0	0	18	24-Jul	
Mardley Heath	6	0	2	1	0	0	1	1	0	0	0	0	1	1	0	0	3	0	1	1	0	0	0	0	0	0	17	06-Apr	
Marshall's Heath	1	0	2	1	0	0	0	0	0	0	0	1	2	2	0	1	0	0	0	1	1	0	0	0	0	0	11		
Millhoppers	1	1	0	0	0	0	0	0	0	0	0	0	3	5	1	0	1	1	0	0	0	0	0	0	2	1	15	6-Jul	
Miswell Lane	0	1	1	0	0	0	0	0	0	0	0	0	2	4	3	2	1	0	0	0	0	0	0	0	0	0	14	7-Jul	
Norhove Great Wood	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	5-Apr	
Norhove Great Wood Bridleway	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	5-Apr	
Oughtonhead Common	7	2	1	0	0	0	1	1	0	0	0	1	2	3	4	3	3	2	2	1	0	1	1	0	0	0	35	2-Apr	
Paimore Heath	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	3	0	9		
Pernvale Wood	5	0	0	1	0	0	1	0	0	0	1	1	2	0	0	1	0	0	0	0	0	0	0	0	0	0	12	1-Apr	
Pryor's Wood	0	2	0	1	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	8		
Railway Fields	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4	19-Jun	
Rothamsted Farm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-Jul	
Sherrards Park Reddings	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	5		
Shrubhill Common	5	2	1	1	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	13	2-Apr	
Sevensage	1	0	0	0	0	0	0	0	0	0	2	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	10	14-Jul	
Templewood Vale	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	4	2-Jul	
The Warren	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	1	0	0	0	0	1	6	29-Jun	
Therfield Heath (Lanckester Hill)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	29-Jul	
Tower Hamlets Cemetery Park	2	4	3	1	1	1	1	1	0	0	5	4	23	14	4	2	9	0	1	2	1	0	0	1	0	0	80	29-Jun	
Tring Park	2	0	0	0	0	0	0	0	0	0	0	0	2	1	2	2	1	1	0	0	0	0	0	1	0	0	11		
Ware Park	0	0	2	2	0	1	0	0	0	0	2	2	4	6	2	4	0	0	1	0	0	0	1	2	2	7	38	24-Sep	
Waterford Heath North	0	0	0	0	0	0	0	0	0	0	0	7	3	4	0	0	2	0	1	2	0	0	0	0	0	0	22	29-Jun	
Wood Lane, Pirton	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	2	2	0	0	0	0	1	0	0	9	24-Jul	
Mean Comma	1.3	0.7	0.5	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.6	1.4	1.9	1.3	1.0	0.9	0.4	0.2	0.2	0.0	0.1	0.1	0.3	0.2	12.5	22-Jun		
Week Number:	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	Peak	
Dark Green Fritillary 2007																													
Aldbury Movers													0	2	2	1	0	0	0	1	0							6	
Mean Dark Green Fritillary													0.0	2.0	2.0	1.0	0.0	0.0	0.0	1.0	0.0						6.0		
Week Number:	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	Peak	
Silver washed Fritillary 2007																													
Brickell Wood																	0	1	0	0	1	0						2	
Mean Silver Washed Fritillary																	0.0	1.0	0.0	0.0	1.0	0.0					2.0		
Week Number:	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	Peak	
Speckled Wood 2007																													
Aldbury Movers	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1	0	0	3	1	8	16-Sep
Balls Wood	0	0	9	6	13	5	0	3	8	8	4	8	2	2	0	0	2	7	11	6	11	15	30	15	10	11	188	3-Sep	
Buene Hill	1	7	19	15	18	0	0	4	2	0	3	1	0	0	2	11	8	6	12	9	0	3	2	4	6	0	133		
Bishops Stortford Southern Country Park	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2		
Brent Reservoir	0	0	0	2	1	2	3	0	0	3	1	1	1	3	4	9	7	3	0	2	0	0	0	0	0	0	2	46	22-Jul
Brickell Wood	0	0	4	2	1	1	1	1	1	1	1	1	0	1	1	2	6	2	3	6	8	5	2	3	2	55	1-Sep		
Colney Heath	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	2	8	0	0	0	2	0	0	0	0	16	10-Aug	
Danebury Park	0	1	1	1	1	0	0	1	1	0	1	1	0	0	1	3	3	1	1	4	3	3	0	0	0	0	27	25-Aug	
Fryent Country Park	0	0	10	2	2	0	0	1	0	1	3	0	0	0	0	10	7	6	9	4	0	1	3	2	2	1	64		
Gunnerbury Triangle	0	3	6	5	4	3	2	0	1	2	0	0	0	7	0	4	8	5	0	5	0	0	0	0	4	2	61	24-Jul	
Gutteridge Wood	1	4	13	4	5	0	5	7	7	6	4	8	0	6	6	13	9	12	17	14	9	12	11	7	1	3	184	5-Aug	
Hampstead Heath	0	2	4	4	1	0	3	0	2	2	5	2	0	3	2	1	2	6	1	3	2	0	1	0					

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

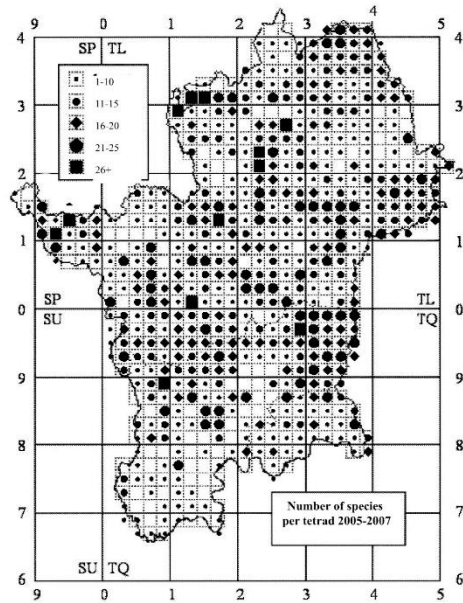
Week Number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	Peak	
Marbled White 2007																													
Aldbury Novers											0	38	76	69	66	89	36	26	10	2	1							413	9-Jul
Bishops Stortford Southern Country Park											0	0	0	1	0	0	0	0	0	0	0							1	27-Jun
Brent Reservoir											0	0	10	21	7	12	4	1	0	0	0							55	27-Jun
Bricket Wood											0	0	0	6	12	11	9	0	0	0	0							38	7-Jul
Colney Heath											0	0	0	0	0	0	2	1	0	0	0							3	18-Jul
Danebury Park											0	0	1	1	1	3	8	1	0	0	0							15	16-Jul
Horsenden Hill West											0	0	0	1	2	3	0	0	0	0	0							6	8-Jul
Knebworth Park											0	0	0	0	0	34	14	9	2	3	0							62	9-Jul
Marshall's Heath											0	0	0	0	0	1	0	0	0	0	0							1	8-Jul
Millhoppers											0	0	0	0	0	1	0	0	0	0	0							1	11-Jul
Miswell Lane											0	0	0	0	2	3	4	2	0	0	0							11	16-Jul
Northaw Great Wood											0	0	0	1	1	0	0	0	0	0	0							2	25-Jun
Oughtonhead Common											0	0	0	5	9	4	0	0	0	0	0							18	7-Jul
Pryor's Wood											0	0	1	0	1	1	0	0	0	0	0							3	
Railway Fields											0	0	0	0	0	1	0	0	0	0	0							1	13-Jul
Rothamsted Farm											0	0	0	0	2	4	0	0	0	0	0							6	9-Jul
Shrubhill Common											0	0	14	6	31	26	5	0	0	0	0							82	7-Jul
Stevenage											0	0	0	3	5	0	3	0	0	0	0							11	7-Jul
Templewood Vale											0	0	0	0	1	0	0	0	0	0	0							1	2-Jul
The Warren											0	0	1	23	9	8	1	0	0	0	0							42	29-Jun
Therfield Heath (Church Hill)											0	0	0	0	0	0	2	0	0	0	0							2	22-Jul
Therfield Heath (Lankester Hill)											0	0	1	2	32	52	41	26	8	0	0							162	13-Jul
Therfield Heath (Top of Ryfe Range)											0	0	0	0	0	0	2	0	0	0	0							2	16-Jul
Tring Park											0	0	0	45	130	165	103	40	24	8	0							515	14-Jul
Ware Park											0	0	0	1	1	1	0	0	0	0	0							3	
Wood Lane, Pirton											0	0	0	3	0	4	3	2	0	0	0							12	9-Jul
Mean Marbled White											0.0	1.5	4.0	7.2	12.0	16.3	9.0	4.2	1.7	0.5	0.0							56.3	10-Jul
Week Number:	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	Peak	
Gatekeeper 2007																													
Aldbury Novers												0	4	6	14	18	34	33	24	15	5	3	0	1	0			157	24-Jul
Balls Wood												0	0	0	1	24	19	11	3	3	2	0	0	0	0			63	16-Jul
Beane Hill												0	0	0	1	20	32	5	5	1	0	0	0	0	0			64	22-Jul
Bishops Stortford Southern Country Park												0	0	0	24	36	53	63	31	10	4	0	0	0	0			221	1-Aug
Brent Reservoir											0	7	17	20	91	138	49	14	3	0	0	0	0	0	0			339	22-Jul
Bricket Wood											0	2	4	15	26	27	25	23	12	3	0	0	0	0	0			137	28-Jul
Colney Heath											0	0	2	4	8	13	4	4	0	0	0	0	0	0	0			35	24-Jul
Danebury Park											0	1	1	5	21	20	26	16	2	0	0	0	0	0	0			92	30-Jul
Pryor's Country Park											0	0	0	0	10	36	34	11	18	1	0	0	0	0	0			110	21-Jul
Gunnerbury Triangle											0	0	2	2	12	21	2	0	0	0	0	0	0	0	0			39	24-Jul
Gutteridge Wood											0	0	3	8	12	17	11	9	5	0	0	0	0	0	0			65	22-Jul
Hampstead Heath											0	0	0	0	0	3	32	6	4	2	1	0	0	0	0			48	24-Jul
Horsenden Hill East											0	0	0	10	31	52	30	7	8	4	0	0	0	0	0			142	22-Jul
Horsenden Hill West											0	1	1	19	58	56	34	5	3	2	1	0	0	0	0			180	15-Jul
Hunsdon Mead											0	0	0	0	0	1	1	0	0	0	0	0	0	0	0			2	2-Aug
Kenwood											0	0	1	9	5	15	28	9	4	0	0	0	0	0	0			71	31-Jul
Kings Langley											0	0	1	3	0	2	2	3	0	0	0	0	0	0	0			11	
Knebworth Park											0	0	0	1	28	41	103	71	49	3	4	4	1	0			302	30-Jul	
Lemsford Springs											0	0	0	0	0	4	7	5	1	1	0	0	0	0	0			18	24-Jul
Mardley Heath											0	0	0	0	9	11	13	8	12	6	0	0	0	0	0			59	28-Jul
Marshall's Heath											0	4	8	16	71	34	23	15	8	0	1	0	0	0	0			180	21-Jul
Millhoppers											0	0	0	0	2	13	10	11	11	1	1	0	0	0	0			48	18-Jul
Miswell Lane											0	0	0	1	1	10	18	33	17	0	0	0	0	0	0			79	8-Aug
Northaw Great Wood											0	0	0	0	0	20	10	8	5	5	3	0	0	0	0			51	19-Jul
Northaw Great Wood Bridleway											0	0	0	0	0	0	1	0	1	0	0	0	0	0	0			2	
Oughtonhead Common											0	2	3	7	46	36	28	19	11	3	1	1	0	0	0			156	19-Jul
Patmore Heath											0	0	0	12	11	14	12	8	4	0	0	0	0	0	0			61	28-Jul
Pervale Wood											0	0	0	4	12	30	14	1	1	1	0	0	0	0	0			63	22-Jul
Pryor's Wood											0	0	0	0	2	3	4	2	0	0	0	0	0	0	0			11	31-Jul
Railway Fields											0	3	1	7	12	21	21	14	0	0	0	0	0	0	0			79	24-Jul
Regents Canal											0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0		3	
Rothamsted Farm											0	0	1	2	3	10	8	4	4	2	0	0	0	0	0			34	24-Jul
Sherrards Park Reddings											0	0	0	0	4	5	3	0	1	1	0	0	0	0	0			13	27-Jul
Shrubhill Common											0	0	0	0	9	11	15	4	0	0	0	0	0	0	0			39	30-Jul
Stevenage											0	1	1	18	29	61	47	32	25	17	0	0	0	0	0			230	4-Aug
Templewood Vale											0	0	0	0	0	10	7	0	0	0	0	0	0	0	0			17	24-Jul
The Warren											0	0	0	15	34	28	29	6	2	0	0	0	0	0	0			114	18-Jul
Therfield Heath (Base of Church Hill)											0	0	0	1	1	3	3	3	2	0	0	0	0	0	0			13	
Therfield Heath (Church Hill)											0	0	0	0	1	0	0	1	1	0	0	0	0	0	0			3	
Therfield Heath (Lankester Hill)											0	0	4	22	22	34	33	31	4	3	0	0	0	0	0			153	22-Jul
Therfield Heath (Ryfe Range)											0	0	0	0	4	4	0	5	3	3	0	0	1	0	0			20	5-Aug
Therfield Heath (Top of Ryfe Range)											0	0	0	4	16	10	15	23	8	8	1	0	0	0	0			85	5-Aug
Tower Hamlets Cemetery Park											0	1	18	19	34	39	34	13	4	3	1	0	0	0	0			166	27-Jul
Tring Park											0	0	3	24	33	42	38	34	15	0	0	0	0	0	0			189	28-Jul
Ware Park			</																										

Appendix 2. Tables of numbers of butterflies counted on weekly transect walks (continued):

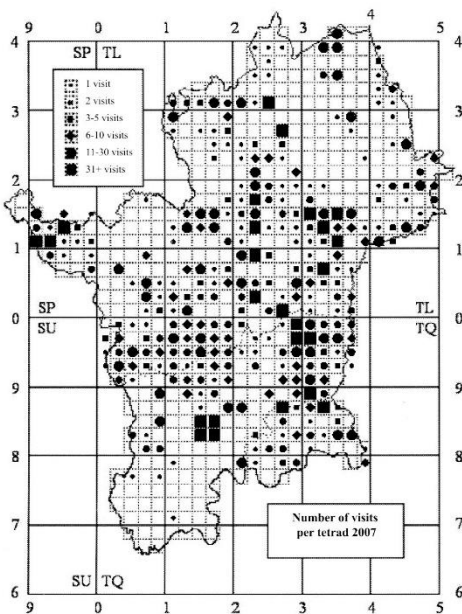
Week Number:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL	Peak	
Meadow Brown 2007																														
Aldbury Nowers											0	10	34	57	35	60	34	48	54	44	34	33	32	41	16	12	17	5	566	7-Jul
Balls Wood										0	0	3	8	36	17	14	41	15	10	4	4	1	1	0	0	0	0	0	149	16-Jun
Beane Hill										0	0	4	4	0	0	11	2	6	0	2	0	0	0	0	0	0	0	0	29	8-Jul
Bishops Stortford Southern Country Park										0	0	10	34	29	35	28	42	31	18	8	8	3	3	1	0	0	0	250	18-Jul	
Brent Reservoir										0	0	23	29	66	47	60	28	33	18	5	7	1	0	0	0	0	0	317	27-Jun	
Bricket Wood										0	0	0	24	26	38	34	39	8	14	2	3	1	0	0	0	0	0	179	15-Jul	
Danebury Heath										0	0	5	17	45	48	51	49	33	43	22	6	3	0	0	0	0	0	322	13-Jul	
Fryent Country Park										0	0	2	18	18	18	25	28	17	8	5	1	0	1	0	0	0	0	141	16-Jul	
Gunnerbury Triangle										0	0	0	67	0	0	111	28	23	18	12	1	0	0	0	1	0	0	270	8-Aug	
Gutteridge Wood										0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	5	3-Jan	
Hampstead Heath										0	0	1	7	4	15	18	20	5	7	7	8	0	0	0	0	0	0	92	18-Jul	
Horsenden Hill East										0	0	3	4	4	11	22	2	19	7	2	1	1	0	0	0	0	0	76	11-Jul	
Horsenden Hill West										0	0	7	6	14	22	29	47	36	19	12	2	1	0	2	0	0	0	197	15-Jul	
Hunsdon Mead										0	0	3	11	28	45	144	223	178	92	50	25	15	5	5	2	0	0	826	15-Jul	
Kewwood										0	0	15	47	70	63	55	46	36	23	0	0	0	0	0	0	0	0	409	28-Jul	
Kings Langley										0	0	2	14	14	34	34	54	28	32	10	8	1	0	0	0	0	0	231	15-Jul	
Knebworth Park										0	2	3	0	0	2	2	1	0	3	6	1	0	0	0	0	1	0	21	5-Aug	
Lemsford Springs										0	1	45	88	0	0	179	190	161	89	83	32	10	6	2	5	0	0	1120	17-Jul	
Marsfield Heath										0	0	0	0	0	1	6	4	2	5	0	0	0	0	0	0	0	0	18	8-Jul	
Marshalls Heath										0	0	3	6	9	11	19	13	7	13	3	2	1	1	0	0	0	0	87	14-Jul	
Millhoppers										0	0	11	42	50	58	97	66	15	24	14	1	11	8	2	0	0	0	388	8-Jul	
Miswell Lane										0	1	1	33	28	54	53	28	36	20	4	0	0	0	0	0	0	0	238	6-Jul	
Norhawe Great Wood										0	0	3	5	7	24	17	9	7	5	4	2	0	0	0	0	0	0	82	7-Jul	
Norhawe Great Wood Bridleway										0	0	4	5	9	8	7	28	6	5	0	1	1	0	0	0	0	0	74	19-Jun	
Oughtonhead Common										0	0	3	4	1	1	1	0	2	3	0	0	0	0	0	0	0	0	15	20-Jun	
Patmore Heath										0	3	6	5	9	12	10	10	15	13	7	6	4	5	3	1	0	0	108	24-Jul	
Pervale Wood										0	0	0	7	2	34	29	28	15	17	6	4	1	0	0	0	0	0	143	7-Jul	
Pryor's Wood										0	0	2	9	14	17	37	44	30	18	12	7	4	0	0	0	0	0	194	21-Jul	
Railway Fields										0	0	3	3	1	1	28	25	24	22	11	0	0	0	0	0	0	0	118	8-Jul	
Regents Canal										0	0	0	1	0	5	4	2	0	0	0	1	0	0	0	0	0	0	13	4-Jul	
Rothamsted Farm										0	0	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	5	5	
Sherrards Park Reddings										0	0	0	9	19	27	35	22	29	15	8	4	2	0	0	0	0	0	170	9-Jul	
Shrubhill Common										0	0	0	1	1	5	8	6	3	2	0	0	0	0	0	0	0	0	25	8-Jul	
Stevensage										0	0	9	47	19	33	61	31	15	16	6	9	5	5	1	1	0	0	258	8-Jul	
Templewood Vale										0	0	3	20	25	29	34	22	15	18	21	20	19	18	0	0	0	0	244	14-Jul	
The Warren										0	0	3	34	33	22	0	0	25	16	18	10	2	1	0	0	0	0	164	23-Jul	
Therfield Heath (Base of Church Hill)										0	0	1	14	36	33	23	31	18	21	14	2	5	3	1	0	0	0	202	29-Jun	
Therfield Heath (Church Hill)										0	0	0	1	1	0	2	3	3	0	0	0	0	0	0	0	0	0	5	22-Jul	
Therfield Heath (Lanckester Hill)										0	0	0	0	0	0	0	0	2	0	1	1	0	1	0	0	0	0	7	16-Jul	
Therfield Heath (Rifle Range)										0	0	0	5	0	6	13	22	9	11	2	1	2	0	0	0	0	0	71	16-Jul	
Therfield Heath (Top of Rifle Range)										0	0	0	2	1	2	0	9	3	1	4	4	0	0	0	1	0	0	27	16-Jul	
Tower Hamlets Cemetery Park										0	0	0	4	0	4	6	17	8	1	3	2	5	0	1	1	0	0	52	16-Jul	
Tring Park										0	0	6	2	8	11	42	33	64	21	20	11	13	7	0	0	0	0	230	18-Jul	
Ware Park										0	2	15	28	53	45	63	43	22	28	34	24	14	9	3	13	0	0	395	14-Jul	
Waterford Heath North										0	2	4	23	25	27	17	16	0	0	0	1	1	0	0	0	0	0	117	3-Aug	
Wood Lane, Pirton										0	0	1	17	10	18	19	22	14	7	2	1	0	0	0	0	0	0	111	16-Jul	
Mean Meadow Brown										0.0	0.4	5.3	16.4	16.5	20.8	31.5	31.7	22.6	16.1	10.2	5.7	3.2	2.2	0.8	0.9	0.4	0.1	189.8	11-Jul	
Week Number:		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	Peak	
Small Heath 2007																														
Aldbury Nowers		0	0	2	3	3	1	1	11	13	15	5	7	4	1	1	0	0	0	0	0	0	1	1	0	0	0	69	19-Jun	
Bishops Stortford Southern Country Park		0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	22-May	
Colney Heath		0	0	1	0	1	0	0	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12-Jun	
Danebury Park		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-Jun	
Stevensage		0	0	0	0	0	0	0	0	0	0	24	47	19	13	0	0	0	0	1	1	1	1	2	0	0	0	16	7-Jul	
Templewood Vale		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103	7-Jul	
The Warren		0	0	2	0	4	3	0	20	29	28	4	4	3	3	1	0	0	0	0	4	13	4	2	0	0	0	124	19-Jun	
Therfield Heath (Base of Church Hill)		0	0	0	1	1	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	9	10-Jun	
Therfield Heath (Church Hill)		0	0	0	0	0	1	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	10-Jun	
Therfield Heath (Lanckester Hill)		0	0	0	0	0	0	0	2	2	0	2	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	11	10-Jun	
Therfield Heath (Rifle Range)		0	0	0	0	0	0	2	3	7	14	3	2	0	3	1	0	0	0	0	1	4	5	0	0	0	0	45	19-Jun	
Therfield Heath (Top of Rifle Range)		0	0	0	0	0	1	0	3	4	23	1	3	3	3	2	2	0	0	0	2	1	11	13	2	1	3	75	19-Jun	
Tower Hamlets Cemetery Park		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	8-Aug	
Tring Park		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7-Jul	
Ware Park		0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3-Jul	
Waterford Heath North		0	0	0	0	0	0	0	1	2	0	0	0	0	0	2	5	7	0	0	0	0	0	0	0	0	0	17	30-Jul	
Wood Lane, Pirton		0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1-May	
Mean Small Heath		0.0	0.0	0.3	0.2	0.5	0.5	0.2	1.0	3.2</																				



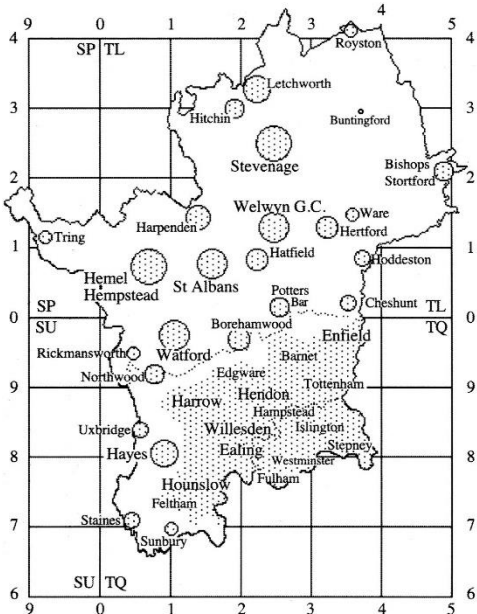
Map showing the number of recording visits made in 2005-2007 for each tetrad.



Map showing the numbers of species of butterfly recorded in each tetrad (2 x 2 Km square) during 2005-2007



Map showing the number of recording visits made in 2007 for each tetrad.



Map of the Hertfordshire and Middlesex survey area showing the main towns (circles) and built up areas (shaded).



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This report is produced by the Recording Subcommittee of the Hertfordshire and Middlesex branch of Butterfly Conservation.
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