

BUTTERFLY CONSERVATION UPPER THAMES BRANCH

Purple Emperor (*Apatura iris*) Report for 2004

Dennis Dell

Main Participants:

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Summary and Conclusions

- The poor weather for most of the first two weeks of July, which included gales and torrential downpours and subsequent cloudy days greatly affected the numbers seen. Males were especially hard hit. In effect, this was a poor Purple Emperor (referred to subsequently as ‘the species’ or ‘the butterfly’) season, though it started promisingly.
- About 66 individual specimens were seen by 14 observers in the following woods: Oakley, Shabbington, Waterperry, Whitecross Green, Boarstall, Chinkwell, Little, Piddington, Rushbeds, Finemere, Grendon, Greatsea, Warburg reserve, and Greenham Common. The sightings in Piddington, Little, and Chinkwell are new records for the species. There was one garden observation. This, according to Matthew Oates, is a very small number, considering the number of observers and the number of woods visited.
- Three territories/assembly areas were confirmed (in Oakley Wood car park area, at Drunkard’s Corner, Waterperry, and in Finemere Wood), and possible new territories were identified in Shabbington, Piddington, Little, Greatsea, Chinkwell, Boarstall and Whitecross Green Woods. Apart from in Finemere and Drunkard’s Corner, all of these territories are at the highest points in the woods.
- The first specimen (male) was seen on June 29th, and the last on July 31st. The best day was July 6th, when a remarkable 22 specimens were sighted. This is mainly because the most experienced observer, Matthew Oates, visited five woods on that day. He tells me that he would have seen about three times as many on this day in prime territory further south, such as Alice Holt Forest. Taking out this extraordinary day, the observations were fairly evenly spread over the whole period.

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1. Introduction

This report represents a local contribution to a national Purple Emperor project, initiated and coordinated by Matthew Oates and Ken Willmott. The objectives, as laid down by Matthew and Ken, are as follows:

To contact members and supporters of Butterfly Conservation who have a particular interest in the species in order to –

- (1) Assess the extent of knowledge on this butterfly assembly areas / territories / ‘master trees’ and draw overall conclusions.
- (2) Stimulate and facilitate searches for such features.
- (3) Endeavour to work out a methodology for monitoring the species’ populations in regular assembly areas.
- (4) Publish a report summarising the key findings in order to assist the butterfly’s conservation, plus annual interim progress reports to contributors.

The national project will probably run for two or three years, depending on progress.

The area covered by this local project is a band, roughly rectangular, about 20km by 8 km, running south-west to north-east, from SP6008 (Waterperry Wood) to SP7124 (Home Wood). The woods may be identified from Table 1, under the map.



Figure 1. Area covered by report

Table1. Ownership of Woods

WOOD		OWNERSHIP/MANAGEMENT RESPONSIBILITY
Finemere	A	BBOWT
Runt's, Balmore, Greatsea, Romer, Home	B	Private
Sheephouse	C	Private
Grendon/Doddershall	D	Private
Rushbeds	E	BBOWT
Chinkwell	F	Forest Enterprise
Little and Piddington	G	Little belongs to the Oxford Diocese, and Piddington is Woodland Trust
Whitecross Green	H	BBOWT
Boarstall	I	Sir Ernest Cooke Trust
Shabbington and Oakley	J	Forest Enterprise
Waterperry	K	Forest Enterprise

A number of UTB members (see front cover) volunteered to spend time in these woods, looking for the butterfly during the flight period, and they reported their findings in a specific format (see appendix). Fourteen people were involved altogether, mostly UTB members but also including: Emma Munday from Forest Enterprise, Julia Carey from Bucks CC, and Matthew Oates, member of the National Conservation Committee, BC., the national leader of this project.

The results of their efforts are brought together here, tentative conclusions are drawn, and proposals are made as to how to proceed with the project in future.

During the winter months Matthew Oates visited most of these woods, prospecting for potential male assembly points. The resultant report identified some 25 candidate sites and was used to direct recorders to spots likely to be used by territorial males.

2. Historical

Old records indicate that this species was well distributed throughout the region in most of the large, deciduous woods. The impression is, that in some of the well-known localities, e.g. Bernwood Forest, the numbers have declined somewhat, over the years, although this is difficult to assess because of the reclusive nature of this butterfly. The data in Table 2 is from English Nature site records (but only up to 1986), and from Levana, the Butterfly Conservation database compiled by Dr Jim Asher. Like many other species, it may have been under-recorded in the past. These days, we have many volunteers looking in many sites, thereby increasing the chances of sightings.

Table 2. Previous records for *A. iris*

Wood	English Nature Site records	Levana
	year	year
Baynes and Bowdown reserve		1989, 1990, 1994, 1996
Bernwood complex*	1986	1984, 1986, 1988, 1990, 1991, 1993, 1995, 1996, 1997, 1999, 2001, 2003
Blackmore Wood		Ched George 1995
Black Park		1999
Blackwater and Stanton Little Wood	1982	
Boarstall	1986	1996
Bowdown		1994
Brasenose and Shotover Hill	1986	
Burnham Beeches		1991
Bussock Woods btwn Newbury and M4		1991
Coombe & Buttermere (s. of Bagshot)		1991
Crowell wood		2002
Denford Park		1998
Finemere		1993, 1995, 1996, 1997, 1999, 2002, 2003
Greenfield Wood		Ched George post 1996
Grendon/Doddershall	1974	1994, 1997, 2003
Hatchet Wood		1997
Holly	1985	1985
Holton	1985	1991,
Home	Pre-1905	
Howbery Park		2001
Howe Park	1959	
Kingwood Common nr Sonning		1991
Leckhampstead and Wicken (N .Bucks)	1986	
Leckhampstead Thicket (W. Berks)		1987
Moor Copse		1997
Nettlebed		1989,
Queen Wood nr Watlington		1990
Romer	Pre-1905	2001, 2003
Rushbeds	1976	1995, 2002, 2003
Rush Down		2002
Stanton Great Wood	1982	1985,
Stowe	1977	
Studley		1987
Tittershall	1985	
Warburg Reserve		1989, 1990, 1993, 1995
Waterperry	1986	1993, 1994, 1997, 2003
Wendover Woods		1998
Whitecross Green	1985	1989, 1994, 1995, 1996, 1999
Whiteleaf Hill		
Wittenham nr Wallingford		1989
Windsor Forest		1996, 1997, 1999, 2001
Wytham	1986	

- * includes Shabbington, Oakley, York Woods and Hell Coppice

3. Results and Discussion

The details of all observations are contained in the appendix. This section summarizes the main findings.

3.1 Weather during the flight period

I am indebted to Matthew Oates who provided me with weather details for every day from June 23rd until the end of July. There were just two ideal days during the last week of June. The first half of July was poor, apart from the 5th and especially the 6th. On some days there were strong gales and heavy downpours. Only the last week in July provided ideal weather, but by then it was probably too late to rescue the flight season.

3.2 Numbers, length of flight period and first and last sightings.

The total observed (66) is approximate; this is because an observer cannot always be sure that a specimen he sees is not the same one which he saw at a different time on that day. For example, last summer I met a gentleman in Finemere Wood at the main territory who had been observing for two hours at that spot. He had noted twenty sightings (flight events) in that time. It is extremely unlikely, however, that he had seen twenty different specimens. This species is, of course, not readily amenable to the catching and marking technique of assessing numbers ('Butterflies', E.B. Ford, Collins, 1945, pp 270-275).

The flight period was rather shorter than average: first sighting June 29th, last July 31st. It is unusual that no observations were made in August. The sightings were fairly evenly spread throughout the period, with the exception of one remarkable day, July 6th, which accounted for about 30% of all sightings! This may be attributed to the fact that our most experienced observer, Matthew Oates, visited five woods on that day and made 14 sightings himself (about 20% of all observations for the whole period for all observers!). Most of the first half of July was a disaster because of stormy weather. July 6th may have been the best day in many of the habitats; Ched George, for example, has informed me that that was the best day for observations in the Ruislip Wood complex, too.

3.3 Individual habitats

It is not possible from the data available this year to rank the woods according to the abundance of the species; there were insufficient observations to allow conclusions to be drawn. It is reassuring to note that observations were made in the majority of the woods visited, indicating that this species is well distributed over this area, albeit not in the numbers found in the classical prime territories in Sussex, Surrey and Hampshire. Woods not visited were Tittershall (private: access difficult), and Ham Green. Although many hours were spent in Sheephouse Wood and around Whiteleaf Cross (where a sighting was made in 2003) no specimens were seen. Clearly, it is advantageous for the survival of the butterfly that these woods form a network of habitats, such that a fertile female only has to fly a relatively short distance over open countryside in order to reach a 'new' wood. Perhaps the most important attribute is an abundance of Sallow, and there are differences between the woods in this respect. It is evident that the woods under BBOWT management (Whitecross Green, Rushbeds and Finemere) have the most Sallow. Matthew Oates' winter report made this point, and added that quality sallows are relatively scarce in many of the woods at present.

A cursory glance at the figures suggests that the Shabbington/Oakley/ Waterperry complex provides the best habitat. However, this is probably not the case, since the quality and quantity of Sallows are relatively low, especially compared with the seventies. These woods were visited by the most observers on more occasions than the other habitats, so this result is not surprising. More visits by more observers would be needed in future to ascertain whether or not any of the woods have 'outstanding' populations. This would be useful, because we could then analyse the 'best woods' in order to establish what the 'special ingredients' are which favour the butterfly. What will be particularly interesting would be to find out how beneficial sympathetic management is, of the kind practised by BBOWT, by comparing populations in a BBOWT wood with that of a neighbouring private wood, which is not specifically managed for the benefit of its flora and fauna. We have a good opportunity to do this: Finemere (BBOWT) is only about 0.5 km to the south of the nearest woods of the Claydon Estate (private), and we found the butterfly in both territories.

The most notable result for 2004 was that, for the first time (at least, I have seen no other records), observations were made in **Little Wood, Piddington Wood and Chinkwell Wood**. Matthew's winter report indeed predicted the species in all 3, albeit scarce in Chinkwell. Both Little Wood and Piddington are quite small, but they are only 500m apart, so it is probably in order to regard them as a single woodland complex as far as this species is concerned. All three woods are fairly dense, with not much in the way of wide sunny rides through them. Maybe this is not important for this butterfly, since it dwells mostly in the canopy and can find its sunshine (and nourishment) at high levels, without needing to come down to ground level. All the sightings in these three woods (Oates and Wilton) were made at or near to the woodland edges at high points .

Woods on the Chilterns

A search of the Levana records, and personal communications from Nick Bowles and Ched George, indicates that the species is well spread throughout the Chilterns, from Tring Park in the north-east to several woods in the area between Watlington, Nettlebed, Henley and High Wycombe. The numbers reported were not high, and these populations are probably not large, and may be transitory/nomadic in nature, moving from habitat to habitat across the Chilterns (which have substantial areas covered by woodland) looking for Sallow, which is certainly not plentiful in this type of (chalkland) habitat.

Gardens

It is noteworthy that, over the years, a number of people have observed *iris* in gardens, right across the UT region from Oxford in the west to Chalfont St Giles in the east. Many of these sightings have been in gardens which are within large woods (e.g., Peter Carr, Farnham Common). This is perhaps unsurprising. However, some of the records were from gardens at least 0.5km away from quite small woods. This is more evidence that this species flies far and wide to colonise new woods. Gardens represent, perhaps, brief stopover points on the way to other woods.

3.4 Assembly areas or territories

Since this is the first time that the woods in this area have been systematically searched for this butterfly by a number of observers in a concerted and coordinated manner; the main objective was to record sightings. However, all participants were also aware of the need to look for possible assembly areas, or territories, to support Matthew Oates' national project. We are grateful to Matthew, who visited many of the woods in this region before the season and identified potential territories to visit during the flight season. Unfortunately, flight season weather was so poor that only a few visits to these candidate territories were possible.

It is evident from many past observations, particularly in Surrey, Hampshire, and Sussex, that the males tend to congregate at high points in woods from early afternoon onwards, so it is worth examining the contours of the woods to be visited to identify potential territories. What is perhaps even more interesting is to try to establish whether specific territories are selected in woods which are flat (for example, Grendon/Doddershall and Rushbeds). There is some evidence that, for 'flat woods', or flat sections of woods, the highest trees are selected, whereby mature Poplars would be the obvious candidates since they achieve greater heights than all other deciduous trees (see Waterperry, Drunkard's Corner). Our results (see below) do in fact support the theory that mature poplars are favoured in flat woods, and Doug Goddard and his colleagues of the Beds and Northants branch have identified two separate territories consisting mainly of Poplars in the Fermyn Woods complex, which is also rather flat.

We can report some modest success, in our search for, or confirmation of, territories, as follows.

- Bernwood complex

1. Oakley Wood Car Park.

The ground rises gently from south to north through Bernwood Forest, from about 75 metres at Hell Coppice reaching 90 metres at the northern end where this car park is situated. Mathew Oates discovered a few years ago that the males congregate around the tops of the Poplars and Oaks at the edge of the car park by the road, and this was confirmed in 2004. Grounded males have been seen also this summer, in and around this car park. This is clearly an important general assembly area.

2. Old Hell Coppice car park.

Many years ago, the Oaks around this spot definitely constituted a territory. Nowadays, few are seen here (only one this summer). It would be interesting to understand why the males have apparently abandoned this area. It is not a high point, although the Oaks are the tallest trees in the immediate vicinity. This phenomenon is not unknown: Ken Willmott has studied this species in Bookham Common, Surrey, for more than 20 years and noted this summer that annual perches (Oak, Hornbeam branches) in a well established territory, continuously occupied over all these years, were more or less

abandoned in 2004, without any radical change to the territory. However, an adjacent section is being used; why?

3. Only one sighting was made of a territorial male in the other areas identified by Matthew as potential territories in the Bernwood complex, at Shabbington beech stand, but we need to persist by spending more time at these spots next season. True territories are occupied annually.

- Waterperry Wood

This could be considered as part of the Bernwood complex. This wood is generally at a lower level than Bernwood, although the ground also rises gently from the south-western corner (65 metres) to the north-eastern corner (Hursthill, 75 metres). So far, the evidence for a territory is rather thin, but it could be that there are two assembly areas:

1. The highest spot is Hursthill. Matthew Oates did observe one male here, quite late in the season towards the end of July, so if we were to spend time here during the first week in July, we might see more.
2. Drunkard's Corner, at the south-eastern corner. This is the lowest spot in this wood. Here, there are three parallel lines of mature poplar trees near the woodland edge, which tower above all neighbouring trees. A couple of years ago, Matthew sighted males around the tops of these poplars. This year, on the 19th July, one or two specimens were seen again gliding between the lines of poplars, high up. It is probable therefore, that this represents an example of a low point in a wood where some very tall trees are used as territory. This awaits confirmation in the next few years.

- Finemere Wood (Figure 2)

From a height of 90 metres at the southern end of this wood, the ground rises gently at first, going northwards through the wood, and then, from the northern end (100 metres) there is a steep rise to the highest point (137 metres) between Finemere and Runt's Wood. Between Finemere and Greatsea wood there is a plateau (about 125 metres) and then there begins a steep drop again from the eastern end of Greatsea down to Romer Wood.

We had high hopes therefore of discovering a territory at the northern end of Finemere. However, in spite of long periods spent staring from the plateau at the tree tops along the northern edge by two of us over many days, no sightings were made. There was some activity at this top end, however, but at a low level; a male was seen on 29th June grounded just outside the wood, and, a few days later, a female was seen flying purposefully at low level away from this northern end of Finemere in the general direction of Balmore Wood.

There is little doubt that there is a territory in the middle of Finemere, since several observers have reported, independently, a concentration of specimens at this point over the last ten years. It is about halfway along the main north-south ride through the middle of the wood. It is not at a high point, and neither are there particularly tall trees here. It does not fit, therefore, with the general 'territory pattern'. This year again, most observations were made at this point.

- Greatsea Wood (Figure 2)

We may have discovered a 'classical' territory here. Over a few days during the first half of July, several sightings were made by two of us around the tops of the trees near to and at the woodland edge, on both sides of the main track where it enters the wood at the eastern edge. This is the highest point of this wood (120 metres), and the ground drops away quite steeply from here westwards.

The question arises as to why nothing was observed at the high northern end of Finemere in contrast to the Greatsea experience. Maybe the greater shelter afforded from the prevailing south-westerlies at the eastern edge of Greatsea is a factor.

- Piddington, Little, and Whitecross Green Woods (WXG) (Figure 3)

Figure 3 shows an escarpment running north-east to south-west, with a steep drop of about 40 metres (110 to 70 metres) to the north-west. The south-eastern edges of these three woods all impinge on the top of this scarp slope, so, in theory, we have favourable 'high points' for these woods. Although the species is regularly reported from WXG, we had no records for the other two, much smaller, woods. For WXG there were sightings at the high southern end on 6th and 20th July. The SW corner sycamore clump (sighting on 6th July) was a known 'Master Tree' site in the 1980s.

This July, Matthew Oates and Dave Wilton noted (several specimens in each wood) territorial behaviour at the eastern edge of Piddington, at the nearest point to the road, along the south-eastern edge of Little, and at the south-eastern corner of WXG (Old Arngrove). Even though Little and Piddington are small, there is plenty of Sallow, and they are very close to each other, so the butterfly has no difficulty in passing between them. The possible discovery of these high point territories is very gratifying, and we look forward to making more observations here in the next few years.

This escarpment ends at Studley Wood, where the contour lines are somewhat wider apart.

- Chinkwell Wood

Brill is one of the highest places in the area (180 metres). The ground drops away steeply in all directions from the village centre. This wood is about one kilometre to the east of Brill, with a high point (125m) along the western edge. Dave Wilton observed two specimens on territory around a Sycamore tree at the high-point corner where the western and southern edges meet.

This is also the first record of this species in this wood, as predicted by Matthew. Again, since it was just on one day, we need to go back several times in the next years to confirm this as an assembly point.

None of the other woods (Rushbeds, Grendon/Doddershall, Boarstall) where observations were made have significant high points, so it remains to be seen whether males assemble around the highest trees in these woods. Insufficient sightings were made to allow us to draw any conclusions yet. However, several sightings were made in Rushbeds at the south-eastern corner over a period of several days, and we need to identify what the attraction is at this point. Interestingly, it is the confluence of a woodland edge, a railway line, and a road junction. There are no obvious very tall trees here.

3.5 Behaviour patterns

Nearly all the observers reported 'normal and classical' behaviour: namely, males grounding on wide rides and in car parks; feeding from animal excreta (not as common as usual, however), rapid skimming flights at low level up and down rides, and territorial behaviour. The latter consists mainly of males resting/basking about 2/3 of the way up in the foliage of deciduous trees, and taking to the wing for short periods (often not more than 30 seconds to one minute), where they will often engage other males in aerial battles, otherwise keeping close to a particular tree, or flying to a neighbouring tree. On one occasion, Tim Watts was able to focus with his telephoto lens on one specimen on an Oak in the assembly area in Finemere, where it remained for about 70 minutes. This is probably typical behaviour; the best chance of making several observations is either early in the season when the males come to ground more frequently, or in well-established territories from about 1 pm onwards. Females do not exhibit territorial behaviour as far as we know. They have been seen mainly flying along main rides, landing on Sallows and Oaks, not often flying at high levels. Unlike the males, they are not often seen grounded.

3.6 No sightings

Except for three cases (see below), I do not have exact information concerning how long all the observers spent looking for the butterfly, compared with the actual time when they saw flight activity. In this context, I quote

from Heslop's 'Notes and Views of the Purple Emperor', page 38: "An individual male, watched continuously by one or other of three of us for ten hours consecutively in perfect weather, was active and visible for a total of only about ten minutes during that time". This translates to only 1.7% of its time being spent on the wing! However, it is clear from more recent experiences, that, in a male territory/assembly area, one will certainly see the butterfly in flight for longer than 1 minute per hour. Outside of an assembly area, and omitting grounded sightings, 2% is probably about right.

The three cases where we have concrete 'non-observation' times were:

- 1) Allen Beechey, who is an experienced observer, spent four hours per day on 19th, 20th, 21st, 23rd and 24th July in good weather conditions in the Bernwood complex without a single sighting. In the neighbouring wood, Waterperry, two were seen on the 19th, and three on the 23rd. by other observers.
- 2) Julia Carey spent 3 hours in Whiteleaf Hill woods (above Princes Risborough) on 13th and 16th July and saw nothing. Last summer the butterfly was seen in this location.
- 3) Dave Wilton spent a total of 12 hours in Finemere on 25th, 28th, 29th June, and 1st, 2nd, 5th, 6th, 9th July without seeing anything.

Allen's example is extreme, but it demonstrates that luck plays a very big role in this activity. Another example: I was in Finemere one afternoon in mid-July from 3 till 4 pm in the established territory and saw no activity; I spoke later with people who had been there just before me, and also after 4 pm, and they had made sightings at the same spot on both occasions.

Patience and persistence does pay dividends: Dave Wilton's experience is an excellent example of this. After his negative experiences mentioned above, he subsequently made 15 sightings in several woods, including two new records (Little and Chinkwell)!

Thus, a would-be observer needs extreme patience, lots of free time, and a knowledge of the habits of this species.

4. Summary and Conclusions

- The poor weather for most of the first two weeks of July, which included gales and torrential downpours, decimated the males and greatly affected the numbers seen.
- About 66 individual specimens were seen by 15 observers in the following woods: Oakley, Shabbington, Waterperry, Whitecross Green, Boarstall, Chinkwell, Little, Piddington, Rushbeds, Finemere, Grendon, Greatsea, Warburg reserve, and Greenham Common.. The sightings in Piddington, Little, and Chinkwell are new records for the species. There was one garden observation.
- Three territories/assembly areas were confirmed (in Oakley Wood car park area, at Drunkard's Corner, Waterperry, and in Finemere Wood), and possible new territories were identified in: Shabbington, Piddington, Little, Greatsea, Chinkwell, Boarstall and Whitecross Green Woods. Apart from in Finemere and Drunkard's Corner, all of these territories are at the highest points in the woods.
- The first specimen (male) was seen on June 29th, and the last on July 31st. The best day was July 6th, when a remarkable 22 specimens were sighted. This is mainly because the most experienced observer, Matthew Oates, visited five woods on that day. Taking out this extraordinary day, the observations were fairly evenly spread over the whole period.

5. Future Activities

- Consolidate work on Matthew Oates' candidate 'Master Tree' sites in 05, hopefully in a decent flight season.
- Substantiate the possible new territories in Greatsea, Waterperry, Piddington, Little, Chinkwell and Whitecross Green.

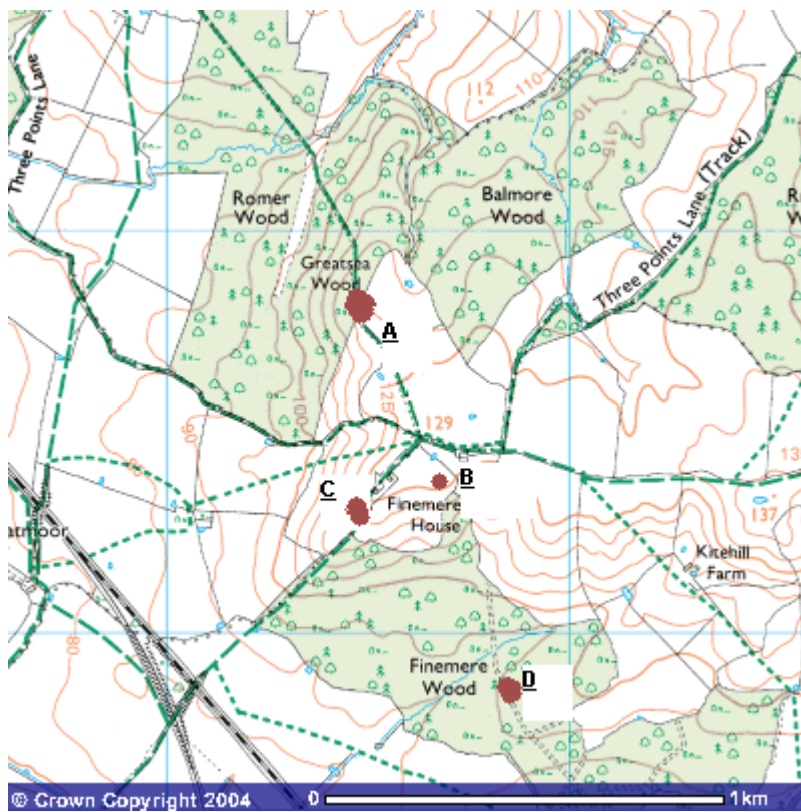
- Look for assembly, or favoured, areas in the 'flat' woods: Rushbeds, and Grendon/Doddershall.
- Investigate Tittershall and Ham cum Home Woods, if access can be granted
- Investigate further Boarstall Woodand and Boarstall Duck Decoy if access can be granted
- Search more woods in the Chilterns
- Look for members to carry out similar investigations in Berkshire and in woods west of Oxford

6. Acknowledgements

This report would not have been possible without the active and enthusiastic support of those mentioned on the front page.

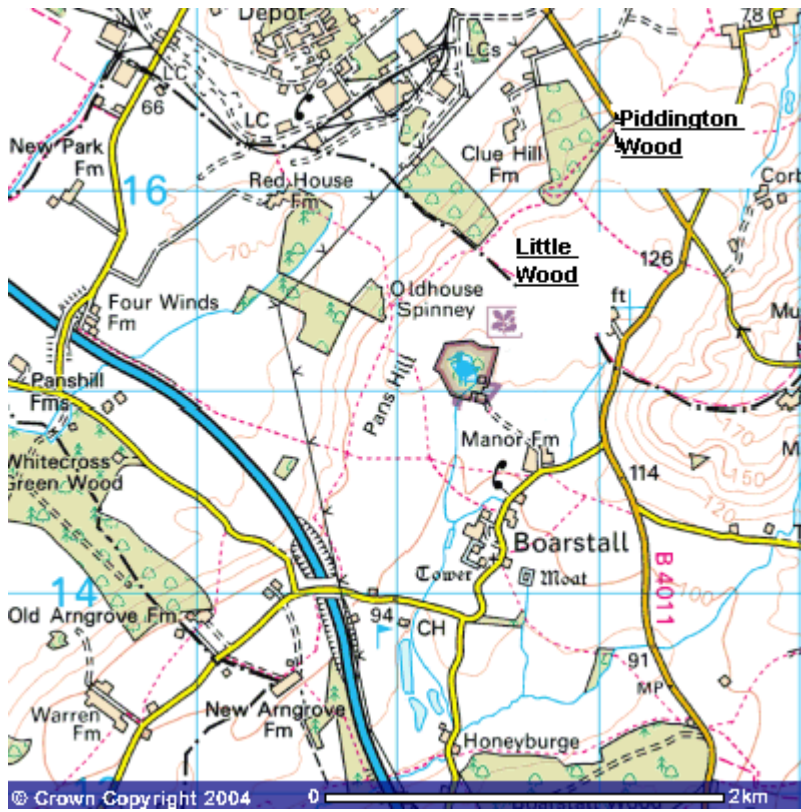
The author would also like to acknowledge, in particular, the expert advice from Matthew Oates and Ken Willmott. Matthew also made many important observations in our region, in addition to all the work he does in other parts of the country.

Figure 2. Finemere and Greatsea Woods



- A. possible territory at high point at edge of Greatsea Wood
- B. female seen flying out of Finemere towards Balmore Wood
- C. first observation of male grounded on 29th June
- D. definite territory at intermediate high point

Figure 3. Piddington, Little, and Whitecross Green Woods



7. APPENDIX

Details of all observations

DATE	OBSERVER	LOCATION ^a	MICRO-LOCATION ^b	NUMBER SEEN AND SEX ^c	TIME ^d	WEATHER CONDITIONS	BEHAVIOUR ^e
11.7	Dave Wilton	Chinkwell Wood	Large Sycamore tree just outside wood SP665141	two	15.50. to 16.10	Overcast, ca 16 degrees C	One seen patrolling canopy of a Sycamore just inside wood, about 10 to 15' below top of tree, on leeward side, landing at different spots for short periods. After about 5 minutes, a second specimen disturbed and a short arial battle ensued, both spiralling upwards. They settled and then continued their stop start patrols until about 16.10, but they did not 'fight' again.
12.7	Dave Wilton	Finemere Wood	Main central north-south ride SP718218	one	Arrived at 14.30	Overcast, breezy, sunny intervals, 17 degrees C	Between ride junction and turning circle. Sighting on Oak, about 2/3 of the way up. Arrived from the other side of the ride at 15.00, landed, and remained there immobile from 15.00 until at least 15.50.
	Dave Wilton	Greatsea Wood	High point at woodland edge. SP715228	two	16.10 to 16.30	Overcast, breezy, sunny intervals, 17 degrees C	Seen from the track about 100 yds from entrance to wood: one specimen patrolling tops of conifers which represent the highest point in the canopy. Disturbed another from the path; it flew up to Ash trees to the left of the conifers, met the first one and a short battle ensued. One spiralling episode; otherwise they chased each other back and forth. Both had settled by 16.20 (sun went in)
13.7	Dave Wilton	Rushbeds Wood	Glade (car park) SP673154	one	11.15 to 13.30 in wood; sighting at 13.20 for one minute	20 degrees C, mainly cloudy	Flew round the glade at treetop height and then disappeared

	Dave Wilton	Finemere Wood	Main central north-south ride SP718218	One or two	14.20 to 16.40; sighting at 15.20, and 5 minutes later	Overcast, 20 degrees C	Flew southwards down ride from near the turning circle, disappeared over Oak near ride junction just below turning circle. Five minutes later flew westbound over ride nearer turning circle, went round Sallow and then east over top of Oaks.
18.7	Dave Wilton	Rushbeds Wood	Glade (car park) SP673154	one	15.00 to 15.30	Cloudy, sunny intervals, 22 C, light breeze from S-W	At 15.05, one appeared and made a 30 second sortie around the tree tops to the south of the glade, coming out of one Oak, orbiting a large Sallow, and landing on another Oak. It was dark when it flew. Waiting another 20 minutes but no further activity
19.7	Dave Wilton	Little Wood	South-eastern edge at entrance to ride; SP624158	two	14.20 to 15.15	21 C, partly sunny, light south-westerly	One at 14.20, patrolling Oak and Silver Birch treetops; 4 minutes later a second appeared; brief chasing session ensued before they patrolled separately. At 14.25, a White Admiral appeared which provoked renewed chasing. At 14.40, a single iris did a quick circuit of the same area.
	Dave Wilton	Rushbeds Wood	Glade (car park) SP673154	one	15.30 to 16.00.	Same as above?	At 15.45, brief glimpse of one patrolling trees to east of railway line at SP673154 which is on the southern edge.
20.7	Dave Wilton	Whitecross Green Wood	High point at southern edge; SP611139	One or two	12.40 to 15.00	Mainly overcast	Single specimen made quick circuit of treetops at 14.25 and disappeared. Sun returned at 14.50, and another brief flight above the treetops was observed.
21.7	Dave Wilton	Boarstall wood	High point by cottage at SP635134.	one	14.45 to 16.10	Mainly overcast	At 16.05, one seen orbiting garden of cottage at height of Oaks which overlook the garden. It appeared to land on one of these Oaks. Waited for 20 minutes but no further activity

DATE	OBSERVER	LOCATION ^a	MICRO-LOCATION ^b	NUMBER SEEN AND SEX ^c	TIME ^d	WEATHER CONDITIONS	BEHAVIOUR ^e
11.7	Allen Beechey	York's wood/ Hell Coppice SP612105	ride	One female (battered)		cloudy	Gliding down ride, settled on Sallow before flying up to nearby Oak. Observed for 10 minutes
10.7	Mick Campbell	Between Yorks Wood and Hell coppice SP612106	Field on edge of wood	one	12.00	Cloudy, approachin g heavy downpour	Flying rapidly a few metres from ground across field
11.7	Mick and Wendy Campbell, Ali Latham	SP611115; clearing by Oakley wood car park		1			
17.7	Mick and Wendy Campbell, Ali Latham	Oakley Wood and Hell Coppice Car parks		2			
19.7	Mick and Wendy Campbell	Waterperry Wood, Drunkards Corner SP609086	Four lines of poplars, lines about 10 metres apart, on edge of wood	One/two ?			Gliding between lines of poplars and settling
23.7	Mick and Wendy Campbell	Waterperry Wood	Main north-south ride	2 females			
24.7	Mick and Wendy Campbell	Finemere Wood		1			
29.6	Dennis Dell	Finemere Wood	Rough ground 100 m outside wood SP715223	1 fresh male			Landing on dried mud patch near pond briefly, flew at low level round this spot and then flew rapidly at low trajectory across hedge towards Finemere Hill House; observed for about 1 minute before it disappeared.
5.7	Dennis Dell	Finemere Wood	Grassy field outside wood SP717224	1 possibly female	15.00	W breeze, 19 C, sun and cloud	Flew rapidly across field at low level northwards away from Finemere

DATE	OBSERVER	LOCATION ^a	MICRO-LOCATION ^b	NUMBER SEEN AND SEX ^c	TIME ^d	WEATHER CONDITIONS	BEHAVIOUR ^e
5.7	Dennis Dell	Greatsea Wood	Oak by main track through wood; high point of wood at edge SP715228	1 or 2	15.30	W breeze, 19 C, sun and cloud	Patrolling Oak, landing for brief periods before disappearing around back of Oak. Observed for about 4 minutes
9.7	Dennis Dell	Greatsea Wood	Same place as above, but a little further down into wood: SP715229	1	16.00	North-westerly breeze, 18 C, sunny	Patrolling trees on both sides of ride, landing briefly; disappeared after a few minutes.
14.7	Dennis Dell	Finemere Wood	Main track through wood, about 50m below turning circle at ride junction SP718218	1	15.45		Patrolling trees on both sides of ride, landing briefly; observed for about 15 minutes before it disappeared over the trees
17.7	Dennis Dell	Grendon/Doddershall Wood	Wide ride through wood, lined with Hazel and Sallow coppice SP699212	1 female	14.00 to 17.00		Landed on small hazel at side of ride about 1 metre from ground, before flying off into wood after about one minute
4.7	Matthew Oates	Shabbington Wood	SP624113; the SE corner of a tall beech stand at a widened ride intersection, sheltered from the S and W by developing conifers	One male	15.00	Long dull spells with some sunny intervals	
6.7	Matthew Oates	Oakley Wood	SP612116/7; tall stand of poplars by the road near entrance to main car park	3 males and one female	13.45 to 14.20	fine	One male on territory at 13.45; another flew up from main ride at 14.10; one on ride near car park at 14.15; one badly damaged female on ride near car park at 14.20
6.7	Matthew Oates	Whitecross Green Wood	Main ride and extreme southern corner, sycamore clump	4 fresh males			One at the southern end; the other three searching the Sallows

6.7	Matthew Oates	Piddington Wood	North-east corner of wood: SP631163	3-4 males			On territory at high point in eastern corner of wood nearest road
6.7	Matthew Oates	Little Wood	Along south-eastern edge	2 males			
23.7	Matthew Oates	Waterperry Wood	Hursthill SP610099; clumps of tall oaks and / or ash protruding above the regenerating coppice layer	One male	15.30	Hot and sunny	On territory
23.7	Matthew Oates	Piddington Wood	SP631163. High point	One female	16.30	Hot and sunny	Old female flying out of Sallow
11.7	Allen Beechey	York's wood/Hell Coppice SP612105	Main ride	One female (battered)		cloudy	Gliding down ride, settled on Sallow before flying up to nearby Oak. Observed for 10 minutes
6.7	Dave Ferguson	Oakley Wood	Car Park ;SP611117	2 males, one quite fresh, one fairly worn	12.00 to 12.50 for 50 minutes	warm, sunny	Feeding on dog faeces. The worn butterfly remained there for the duration, the other flew down the ride after ten minutes landing frequently on the path. It eventually disappeared E down the path. At 13.40 we returned but both butterflies had gone.
6.7	Dave Ferguson	Between Hell coppice and Yorks Wood	Ride; SP612105	1	11.20, seen for 20 minutes	warm, sunny	flew SSW over ride at tree top height.
6.7	Dave Ferguson	Oakley Wood	Car Park SP611117	1	13.10 for 40 minutes	warm, sunny	flew over car park NE at tree top height. It could have been one of the butterflies described above. Observation period (such as it was - we were in the car having lunch): 40 mins. warm, sunny

DATE	OBSERVER	LOCATION ^a	MICRO-LOCATION ^b	NUMBER SEEN AND SEX ^c	TIME ^d	WEATHER CONDITIONS	BEHAVIOUR ^e
19.7	Dave Ferguson	Rushbeds Wood	Main ride on W side of wood; SP663155	1	14.30 for 40 minutes	warm, humid, sunny periods	flew over ride WSW at tree-top height.
12.7	Tim and Colleen Watts	Finemere Wood	Oak bordering main track, about 50 metres south of turning circle; SP 718218	1	15.00 to 16.05	Breeze from the NW at 10kts ; overcast atemperature +17C.	Landed in top of oak tree; with telescope on 60x zoom with digi camera attached got some photos. It stayed in same spot for 1hr 5mins. Could only see underside and out of 60 photos taken only 1 with wings closed showing the eye and this was a split second before it flew off, which was when sun came out for first time. Seen landed on tree 3- 4.05 p.m. I possibly saw it or another 1hr earlier v. briefly in flight.
23.7	Tim and Colleen Watts	Finemere Wood	Oak bordering main track, about 50 metres south of turning circle; SP 718218	1 female	17.00		Flying low and three times in and around SallowBush
26.7	Tim and Colleen Watts	Finemere Wood	Oak bordering main track, about 50 metres south of turning circle; SP 718218	1 female	17.30		Similar behaviour to above
6.7	Emma Munday	Shabbington Woods	Main gravel east-west track through centre of wood	4 males	1 hour, seen around noon	Warm and sunny	Seen at two locations along this long track, SP612117 and SP624107. Two on dog faeces; two flying low and fast up and down track at separate locations
23.7.	Tony Marshall	Prestwood, Gt Missenden	Top of Cherry-Laurel bush in garden	One female	13.00, for 5 minutes	sunny	basking
9.7	Tony Croft	Whitecross Green Wood	Car Park, gravel and hardcore surrounded by oaks and blackthorn	One male	1515 was present on arrival and remained for 10 minutes	Sunny periods	Remained on ground "licking" stone, then flew off at low level

12.7	Tom Dunbar	Bernwood/Oakley Wood	SP613118 In the clearing adjacent to main carpark – across the main ride	1	?	Poor	The butterfly did a circle of the clearing and settled on a silver birch. The birch trunk was seriously covered in 'old' sap deposit which may have been an attraction. This was my only sighting this season – a disappointment!
24.7	Tom Dunbar	Greenham Common	SU4855643	1			
31.7	Becky Woodell	Shabbington Wood	SP613112		3 pm		Flying low along ride

- a) Location: name of wood and grid reference of location
- b) Micro-location: e.g., wide gravel ride, bounded by mature Oaks, Ashes on either side; edge of wood, south facing, mature Oaks; canopy within edge of wood, about 10 metres between trees, etc etc
- c) Not always possible to be sure of sex of course
- d) Time; if, for example, you arrive at midday and stand in a likely spot, but don't see any activity until 12.15, and this goes on for 5 minutes before they disappear from sight, then write "5 minutes activity during 20 minutes observation period"
- e) Behaviour: this is perhaps the most interesting information; e.g., males grounding for a minute at a time then skimming at low level up and down ride; two specimens flying around Oak at four metres height, often landing briefly; two males soaring in combat flight for two minutes, then landing on Ash; female ovipositing on Salix cinerea (or caprea), two eggs laid on same bush etc, etc.