

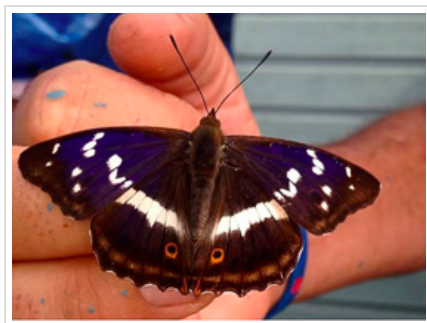
Eastern Region Purple Emperor *Apatura iris* report for 2014

Liz Goodyear and Andrew Middleton

Abstract: This report updates our previous reports, *The Hertfordshire Purple Emperor* (Goodyear and Middleton, 2003), the *Purple Emperor Project Progress Report for 2003* (Goodyear and Middleton, 2004) and the *Purple Emperor Project Progress Report for 2004 and 2005* (Goodyear and Middleton, 2006) all relating to the Eastern Region. It details additional historic records, and more recent records from our surveys and from other sources. After locating a number of *Apatura iris* colonies across Hertfordshire and Middlesex between 2000 and 2011, the authors found suitable habitat and a number of colonies in Essex in 2011-12, and in 2013-14 they found several locations for *A. iris* in Suffolk and Cambridgeshire. This was augmented by: Laurence Drummond's successful survey work across central-west Essex in 2014; a number of widespread sightings in the excellent *A. iris* year of 2013; further recent sightings from Essex, Suffolk, Cambridgeshire and Huntingdonshire, all partly through increased observer effort, and Norfolk; other casual sightings. The report also discusses habitat quality, our survey technique, low-level landscape populations of *A. iris*, and the potential for *A. iris* to be present in Norfolk.

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With notes from Laurence Drummond (Essex survey) and Simon Leatherdale (Forestry Commission Officer, retired). The Eastern Region in this report covers Hertfordshire, Middlesex (Vice-County 21), Essex, Suffolk, Norfolk and Cambridgeshire (see Appendix A). This report provides a 2013-14 update and also contains historic information that adds to past reports.



A. iris in a Thundridge garden

Photo © Katie Sampford

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1. Overview

Following a decade of study of *A. iris* in Hertfordshire and Middlesex, we expanded our study and began detailed surveys of Essex in

2011-12, finding suitable habitat and a number of colonies in the north-west of the county. We expanded further to adjacent areas in Cambridgeshire and Suffolk in 2013-14 when suitable habitat was identified and further colonies located. In the exceptional *A. iris* year of 2013, a few more records came from yet further new areas in the Eastern Region, predominantly in Essex and Huntingdonshire. In 2014, Laurence Drummond located a number of colonies in central-west Essex, and a few more sightings were made across Suffolk, generally from areas shown by our surveys to hold suitable habitat. More historical records continue to be discovered, including further observations from habitat similar to Woodwalton Fen National Nature Reserve (NNR) in Huntingdonshire where *A. iris* is present.

Our last fully documented analysis of historic records was in our Purple Emperor Project Progress Report for 2004 and 2005 (Goodyear and Middleton, 2006) when we listed much of our Eastern Region research in the Appendix. There have however been some significant records in recent years and new findings which are given below. Since our study began in the early 2000s we have systematically followed up nearly every reference to an *A. iris* sighting in the Eastern Region and tried to find the original historic references. We have as a result produced what we feel to be the definitive distribution map. There will always be a few discrepancies as often the historical reference might only give a vague location or the 'dot' would be attributed to a town or village whereas it may well relate to a nearby woodland location or associated habitat, which could be in an adjacent 10km square. In some recent examples, there have in fact been errors (see section 4.3 - "Correcting dots on the Essex Map").

A map of all decadal records known to us in the Eastern Region is shown in Figure 1, and our take on the landscape population found in Essex and Suffolk is shown in Figure 2. For example, looking from Epping Forest one can see Enfield Chase and Broxbourne Woods, all of which can be seen from Galleyhill Wood, as can the Harlow woods. This landscape holds *A. iris* and the distances of 5-10km between them are just a hop for a female dispersing across a field or along a hedgerow, looking for suitable willows (*salix* spp.) on which to lay, or a male seeking out a likely assembly area.

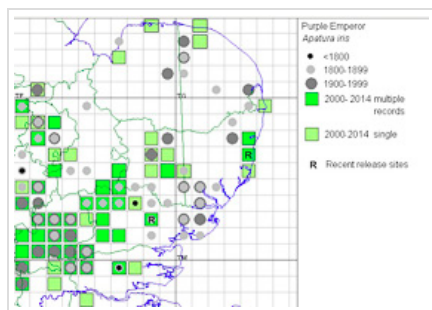


Figure 1 - *A. iris* records in the Eastern Region at 10km level (records from release sites of Marks Hall Estate, Essex and Therberton Woods and environs, Suffolk are included)
(Click to enlarge)

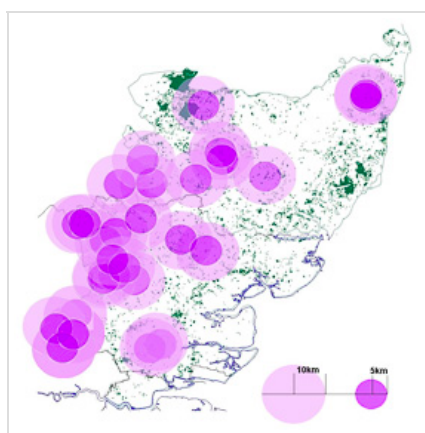


Figure 2 - *A. iris* records for Essex and Suffolk since 2000 with 5km and 10km radius circles drawn around them (records from release sites of Marks Hall Estate, Essex and Therberton Woods and environs, Suffolk are not included)
(Click to enlarge)

Our survey method is to use this knowledge to firstly identify *salix*-rich landscapes and woodlands. We then use maps to identify potential assembly areas in the form of high spots, mostly at woodland edges and corners. We then follow this up with site visits to see if any of these high spots have prominent trees, usually oak (*quercus* spp.) and ash (*Fraxinus excelsior*). We then look for accessible places outside of the wood, from where we might be able to view the canopy, usually from a distance of 100-300m. Timing is then important in detecting low-level populations, with the best of the flight period spanning maybe 7-10 days of July, and the strongest activity often being seen as 13:00 approaches, and then for a while after. This may be the time when most, if any, male clashes are seen, although male territorial activity can continue into early evening. Several times we have detected a colony when a male has taken off after an over-flying Woodpigeon (*Columba palumbus*). We might view with our binoculars for several hours in the hope of seeing a male glide around a prominent tree; maybe we might make many visits to a location, over several years, before we get a sighting, and then it may be a further year or two before we are able to locate any key perches and areas of patrol. We have quite often found the butterfly in woodlands with no previous records, and we have rarely come across one on the ground. We do not dismiss a location if the habitat is suitable and within historic range, as experience has shown us that assembly areas can be extremely difficult to locate. We concentrate on locating assembly areas because sightings along rides and elsewhere are more a matter of chance, whereas once an assembly area is found, it is likely to be used year after year as long as the landscape breeding habitat remains intact.

Those interested or involved in conservation should consider favourable management throughout such areas (and incorporate this in woodland and landscape plans) and also retain *salix* along hedges, roads and green rides, and in scrubby areas etc.

The increased number of records, in our view, is due to several factors:

- a better understanding of low density populations.

- improvements in recording methods and effort.
- improvements in dissemination and communication of information, aided by the arrival of digital cameras and the Internet.
- a slow reduction in the traditional rejection/dismissal of *A. iris* records/reports by county butterfly recorders.
- climate change.
- improvements in habitat - a return to broadleaved woodland and positive management. Please see the report "*8. Sallow - a weed no more?*" by Simon Leatherdale, contained later in this article, who encouraged favourable management across a wide area of Essex and Suffolk during his time as a Forestry Commission (FC) Officer.

Many of the sites we have found seem unlikely to produce a sighting for the casual observer. Whilst *A. iris* is undoubtedly doing well recently, we do believe the species has been present at low density all along in some of these areas at least, and that's what has got us out looking for the last fifteen to twenty years.

Some of the key areas of yesteryear now appear to have poor habitat quality, which would explain the lack of modern sightings. Maybe in years gone by they held exceptional quantities of *salix*, as is found today in Fermyn Woods. However, increased recorder effort has yielded sightings in some Eastern Region woods, which we have identified as having suitable *salix*-rich habitat, whilst rare or isolated sightings, old and new, from landscapes across the region may be related to these low density populations which can be so hard to locate. The situation regarding occasional sightings and habitat quality for Norfolk appear similar to those encountered over recent years in the other counties of the Eastern Region, suggesting *A. iris* may also be present at low density in Norfolk.

This project would not have been possible without funding, so we would like to thank all those organisations and individuals who have helped in this way, including the Butterfly Conservation branches of Suffolk, and Hertfordshire and Middlesex (HMBC), the Wildlife Trusts of Suffolk (SWT) and Essex (EWT), and the Robert Kiln Trust. We hope to raise funding to enable a similar study of the Norfolk landscape and would welcome support for this project. We would also like to thank the trustees and staff of Butterfly Conservation (BC) for continually supporting us and our survey work.

[2. Hertfordshire](#)

2.1 Introduction

In 2011, we received some travel expense funding from the Hertfordshire Environmental Forum to conduct *salix* surveys of woods in 'historic' areas of Hertfordshire. We were delighted with our results as we confirmed that *A. iris* was (still) present in the historic areas of central and north-east Hertfordshire.

The 2013 report for Hertfordshire was prepared but not published and is incorporated here within this 2014 report.

After a very wet second half of 2012, which left woods saturated, the spring of 2013 was relatively dry. However, the very cold temperatures in March and April were quite exceptional. This left nearly all of the butterfly species 'running' about three weeks later than would normally be expected. The first emergence date of *A. iris* in 2012 had been 'late', however 2013 was even later. Additionally, when they did emerge, numbers were generally considered quite high, although not quite as high as some other regions experienced and the butterfly made some unexpected, but hoped for, appearances at new sites! The 2014 season was the complete opposite of 2012 and 2013 with a wet autumn and winter and mild relatively dry spring, causing a considerably earlier flight period.

2.2 Flight period 2013

Nationally, the first sighting of *A. iris* occurred on 1st July 2013, in Buckinghamshire, of what is assumed to be a naturally occurring insect. Surrey is normally the location of the first sighting and Bookham Common, in particular, had been watched by Ken Willmott for several days prior to this, but they remained absent for several days to come and it wasn't until 8th July 2013 (Purple Empire, 2013) that the national season started seriously! A visit to Ruislip Woods (TQ08) by Andrew Middleton, Liz Goodyear and Laurence Drummond on 7th July 2013 had proved negative despite watching the St Vincent's Territory (Ruislip) in soaring temperatures. Andrew Middleton and Liz Goodyear had visited the Northaw Great Wood (TL20) assembly area also on several occasions but it was a single male at the Whitewebbs (TQ39) assembly area, north Enfield, that started the season on 9th July 2013, seen by Liz Goodyear and again on 10th July 2013. The first sightings in Hertfordshire were on 12th July 2013 at several locations. When the species emerged in earnest, sightings came thick and fast at the assembly areas. The species peaked very rapidly with so many *A. iris* emerging quite quickly in an unusually hot and sunny July, when a week of good sunshine ensued. However, this fine weather broke overnight on 22nd July 2013 leaving a period of unsettled weather. The 2012 season had been quite drawn out with some very late sightings; the last confirmed sighting was on 23rd August 2012. However the 2013 season was shorter with the last confirmed sighting at Northaw on 14th August 2013. A possible sighting on the canal bank at Marsworth, seen by canal volunteers on 2nd September 2013, cannot be confirmed and has not been entered in the database.

2.3 Flight period 2014

Nationally, the first sighting of *A. iris* occurred on 17th June 2014, in Surrey (Purple Empire, 2014). However, it was not until 20th June 2014 that a grounded individual was seen at Broxbourne Wood NNR (TL30) (Herts and Middlesex BC, 2014a) and Liz Goodyear with Laurence Drummond saw a single individual at the Whitewebbs assembly area the following day. The flight period was relatively long, when the last known reports were on 27th July from three locations in Hertfordshire.

2.4 Sightings in 2013 and 2014

In 2013, many of the regular woodland complexes were visited, in particular by Laurence Drummond. However, in 2014, quite a few sites did not receive so many visits since Laurence was concentrating his survey work in west Essex.

2.4.1 South Hertfordshire

2.4.1.1 TQ09 and TQ19

TQ09 is just north of the Ruislip Woods complex and in 2013 single males were observed at Maple Lodge and Whippendell Woods. Andrew Middleton and Liz Goodyear also confirmed an assembly area at Bishops Wood. These sightings come as no surprise. In 2014, a report was received from Cassiobury Park (TQ09) in Watford, which is only a short distance from Whippendell Woods.

In 2013 (in TQ19) Steve Murray observed territorial behaviour at the restricted access Herts and Middlesex Wildlife Trust (HMWT) Reserve of Hilfield Reservoir, much to his and Bob Cripps' excitement on 19th July 2013. Steve continued to watch the assembly area until 25th July 2013 with multiple sightings on several occasions! *A. iris* was again recorded at Hilfield in 2014 (Andrew Wood, pers. comm.).

2.4.1.2 TL10

The main woodland complex in TL10 is Bricket Wood Common, which is monitored by Malcolm Hull. Malcolm, with Chris Newman in 2013, was able to make several observations of territorial behaviour in Mutchetts Wood, having changed his vantage point to the south-east side of the railway at our suggestion. Bricket Wood, having become very popular with casual recorders, produced several other observations of *A. iris* and, as in previous years, saw good numbers of Silver-washed Fritillary (*Argynnis paphia*) in both 2013 and 2014. Bricket Wood is now becoming one of the best sites to observe *A. iris* in Hertfordshire.

2.4.1.3 TL20

Apart from a visit on 12th July 2013 by Andrew Middleton, which proved negative, no visits were made to the Mimms Wood complex (North Mymms area), to our knowledge, in 2013 or 2014. The news during the previous winter (2012), that the key woods were again subject to another FC Grant application (which we commented on), filled us with further dread and it is no longer a site we enjoy visiting. Several people made observations at Fir and Pond Wood, in particular on the field trip day where these woods became part of a tour of assembly areas arranged by Andrew Middleton. A male was observed by many in the 'usual area' on the north edge of Pond Wood and gave greater understanding to those present regarding the skill of looking through binoculars for males flying or clashing over the woodland canopy from outside a wood. Sightings were again reported here around 'the bonsai tree' in 2014.

Only a few visits were made to Northaw Great Wood, mostly towards the end of the season and on 18th August 2013, Andrew Middleton and Liz Goodyear watched a solitary and rather faded male fly around the territory for about 20 minutes until cloud increased. A late afternoon visit on 20th August 2013 produced no *A. iris* although it was thought they could still be flying. No further visits were made that year. In 2014 Liz Goodyear made early season visits with no success, but a few end of season visits were made and, in particular, on 23rd July two males were still actively patrolling the territory. Liz Goodyear was joined that day by Adam Wilson who reported seeing three on 17th July 2014 flying in the usual gap (Adam Wilson, pers. comm.).

2.4.1.4 Broxbourne Woods Complex, including Wormley Wood (TL30)

In 2013, Laurence Drummond visited the Broxbourne Woods complex including Wormley Wood and the Blackfan Wood area on several occasions during his week's holiday with some good sightings. Work in the central area of the Broxbourne Woods complex caused concern as the private landowners had built a new logging track. The implication for *A. iris* is unknown but it is understood that the plan does mention the importance of willows (*salix* spp.) and honeysuckles (*lonicera* spp.) for White Admiral (*Limenitis camilla*). A few reports came from the Broxbourne Wood Nature Reserve (NR) during 2013 and 2014, although it was the *A. paphia* that stole the show in both years. No sightings came from Broxbourne Common in 2013 but Laurence Drummond, much to his surprise, observed a single male here on 19th July 2014. Bourne Wood, Blackfan Wood and Claypits Wood have not produced sightings in either year. It is still not known what long-term effect the major works undertaken at Broxbourne Wood NR will have. Further work undertaken in the autumn of 2013 has involved the removal of more trees and in particular the *salix* and *lonicera*-rich belt alongside the main ride. Our efforts to influence the management plan over the last decade, to retain as much of this habitat as possible, have included several meetings with the site managers, attending meetings at County Hall in Hertford, commenting on the management plan and also making a detailed survey to provide a habitat map generated from our personal resources of time (several days each) and costs. It is heart-breaking to see such an important area for *A. iris* being destroyed and so much personal effort and resources utterly wasted!

Some work was undertaken at Wormley Wood NNR during the winter of 2012-2013 by the HMWT, where some small scallops have been created as part of their South East Woodland Project. A new management plan is also being prepared by the Woodland Trust (WT). The large rideside clearings that were created during woodland work parties in Wormley Wood, led by HMBC in the winter of 2011 and 2012, are prospering, with many herbaceous and shrubby plants regenerating, not least a selection of pollarded *salix*, which is very reassuring (see figures 3 and 4).

Gale forces winds on the 28th October 2013 caused several *salix* to fall in the Wormley Woods area (and presumably in other woods) - attempts to find larvae were not successful.

The wet winter and spring of 2013-2014 left many of the key areas in Wormley Wood unwatchable due to muddy conditions throughout the flight period (Laurence Drummond, pers. comm.) and no reports were received.



Figure 3 - Two year old pollarded salix in 2013

Photo © Liz Goodyear



Figure 4 - Three year old pollarded salix in 2013

Photo © Liz Goodyear



Figure 5 - Storm damaged salix in Wormley Wood NNR in 2013

Photo © Liz Goodyear

2.4.1.5 TL21

Malcolm Hull was unable to locate *A. iris* at Symondshyde Wood in 2013 or 2014 but a report did come of a female seen by the gatehouse of Brocket Hall, only a short distance across the fields from Symondshyde Wood in 2013.

However, exciting news came in both 2013 and 2014, when *A. iris* was first reported at Bramfield Woods by Andrew and Jane Wood in 2013 and then from Mardley Heath and Sherrardspark Wood in 2014. We had been predicting for many years that all these woods should support the butterfly as the landscape is *salix*-rich!

2.4.1.6 TL31

The best-known site in TL31 is Balls Wood and in 2013 there were several reports after a gap of a few years. A sighting was also reported from the Golding's Wood area at the beginning of the flight period in 2013 and, in 2014, at the Mount Pleasant end, a male flying around the top of a *quercus* spp. As yet no assembly area has been located in Balls Wood - this remains a challenge!

Just to the west of Hertford is Panshanger Park, an area of parkland that has recently been made more accessible to the public and on the 30th June, 2014, a male *A. iris* was observed on 'sheep poo' by the HMWT transect walker, Jennifer Gilbert (Jennifer Gilbert, pers. comm.). The grid reference for the sighting was just in TL31 by a matter of a few metres! With less restricted access to the site, hopefully more reports will be received next year.

Again exciting was that, in 2014, Liz Goodyear made a visit to Bardon Clumps close to both Rickneys Quarry and Waterford Heath. Both sites are *salix*-rich in part due to the two sites having disused filter beds and Bardon Clumps has a defined high point which Liz decided to watch on 13th July 2014. Walking in beside Rickneys, Liz had only got half way along the track when *A. iris* flew over and a second sighting was made a short while later. Laurence Drummond subsequently visited on several more occasions with further sightings of a single individual on each visit.

Liz Goodyear attempted to locate assembly areas at Sacombe Wood and Great Southey Wood near High Cross with no success in 2014. However, a wonderful story arrived in Liz's inbox on 26th June 2014. Nick Sampford was an early champion of the Purple Emperor in Hertfordshire, and his life was cut too short.

"Something really strange happened yesterday and although people might not believe it I think it was a sign from my dad, Nick Sampford (one of his favourite butterflies was a Purple Emperor). Yesterday 25th June I had a Purple Emperor in my garden in Thundridge. It was here for about an hour and a half. It was actually landing on my son, daughter, uncle and me. I got hundreds of fantastic photos. Not sure if these can be used for anything but I know my dad would have been very proud of them and been very jealous I got to experience such a beautiful butterfly in my garden."

Katie Sampford - June 2014



Figure 6 - *A. iris* in a Thundridge garden

Photo © Katie Sampford



Figure 7 - *A. iris* in a Thundridge garden

Photo © Katie Sampford

2.4.2 North-West Hertfordshire

2.4.2.1 Tring Park and surrounding woodlands

Considering how good a season 2013 was (which most other areas were experiencing), it is quite concerning that there were no reports from any of these woods. However, there is the unconfirmed sighting along the canal side at Marsworth late in the season.

In 2014, news from the north-west area of Hertfordshire was a little more encouraging with a report of 'a wing' found in Stubbing's Wood which is close to Tring Park (SP91). An individual was seen on an office window in Berkhamsted (SP90) and, much to Malcolm Newland's delight, *A. iris* visited his Hemel Hempstead garden (TL00). Unfortunately for Malcolm he was away at the time and the event was recorded on a digital camera by his son, David!

An individual was seen on an office window in Berkhamsted (SP90), close to the A41 and Hockeridge Wood, on the Hertfordshire/Buckinghamshire border.



Figure 8 - *A. iris* in Berkhamsted

Photo © Amy Paterson

2.4.3 Central and North-East Hertfordshire

2.4.3.1 TL12 and TL22

All credit had to be given in 2013 to Donald Gregory who single-handedly cleaned up this area after no reports in 2012. Having attended the field trip on 13th July 2013, he used the experience and information gained that day to visit all the key woods in this area and was able to provide confirmed sightings at Hitch Wood (TL12) and Rusling End (TL22), and added three further assembly areas in the St Pauls Walden area. He was able to confirm some of these sites again in 2014 (Donald Gregory, pers. comm.). Peter Clarke saw a single female *A. iris* at the Knebworth Woods complex (TL22), centred on Watery Grove, two years running and had a second sighting in 2013 near Pigeonswick Cottage. He is still searching for the elusive assembly area (Peter Clarke, pers. comm.). In 2013 two separate reports were received from the Hitch Wood area near Preston. First, Brian Sawford received a phone call from the lady who saw the original sighting in 1986 to say there was another *A. iris* in her bedroom, mirroring the first sighting (Sawford, 1987). The second report was from a neighbour who said that *A. iris* had come down on his newly laid pond lining.

In 2013, a message was posted on the Purple Empire blog (Purple Empire, 2013) of a sighting of a female found in a greenhouse just

north-east of Stevenage in TL22 near Weston and quite close to Box Wood. Although this is in the same 10km square as the Knebworth Woods complex, the sighting was some considerable distance east and a new area for this butterfly.

2.4.3.2 TL32

In both 2013 and 2014, sightings continued from Plashes Wood, the high points being visible across the field from an adjacent public footpath. In 2013 Laurence saw three *A. iris* in what we call the lower assembly area, which is just inside the wood but close to the public footpath. In 2014 Andrew Wood was able to take video footage of a grounded male whilst he walked through the wood.

2.4.3.3 North-East Hertfordshire

Close to the Essex/Hertfordshire border, and not far from Hatfield Forest (see Section 4 - Essex), Bob Stroud reported *A. iris* from his Bishop's Stortford garden (TL52) on 12th July 2014. The nearest area of woodland is Birchanger Wood though.

Full details of most sightings can be found in the Archive section of the Herts and Middlesex Butterfly Conservation Branch (HMBC) website (Herts and Middlesex BC, 2014b). Some additional reports can be found on the HMBC Facebook page (Herts and Middlesex BC, 2014c).

2.5 Hertfordshire historic updates

Since writing our last report, the Purple Emperor Project Progress Report for 2004 and 2005 (Goodyear and Middleton, 2006), we have not uncovered any new historic reports.

3. Middlesex

3.1 Introduction

Also see 2.1. The 2013 report for Middlesex was prepared but not published and is incorporated here within this 2014 report.

3.2 Flight period 2013 and 2014

See Sections 2.2 and 2.3.

3.3 Sightings in 2013 and 2014

Following the exciting news in 2012 from Whitewebbs Wood, part of the historic Royal Enfield Chase, this wood produced the first sighting on 9th July 2013, in a small gap in the canopy that Liz Goodyear finds incredible that Andrew Middleton found it originally! Liz Goodyear and Laurence Drummond saw a single male on 21st June 2014, but no further sightings were made in 2014.

Kit Jones finally made contact with *A. iris* at Arkley Gate (TQ29) in 2013, an area he has been watching for several years. This is an area where Kit has established a good number of *salix* some years ago, and his conservation efforts have obviously paid off. Robin White who, with Robert Callf, is a regular visitor to Trent Park in North Enfield (TQ29), had a lifetime first on 22nd July 2014 when he rang Robert Callf to report a sighting of *A. iris* near to Williams Wood.

Several reports came from Ruislip, in particular the St Vincent's assembly area, in both years.

After preparing the 2012 report a late report was received from Hampstead Heath (TQ28) of a male *A. iris*. This would be a very significant location if further sightings could be repeated. We did not have the opportunity to visit in 2013 or 2014.

Full details of most sightings can be found in the Archive section of the HMBC website (Herts and Middlesex BC, 2014b). Some additional reports can be found on the HMBC Facebook page (Herts and Middlesex BC, 2014c).

3.4 Middlesex - historic updates and additional information

It should be remembered that Middlesex wasn't always the urban sprawl that we now know.

From "Bradshaw's Descriptive Railway Handbook of Great Britain and Ireland Section 1 - 1863" (Bradshaw, 1863): The county of Middlesex

"Middlesex is a very important inland county, containing with the British Capital, much of the wealth and political influence of the inhabitants of these realms.

Middlesex from its gently waving surface is particularly suited for agriculture. For the most part, the ground rises from the banks of the Thames towards the north; and within a few miles from London, a range of gently swelling eminences, of which Hampstead, Highgate and Muswell Hill are the chief, protects the metropolis from the northern blasts. These heights afford many pleasing and extensive prospects; and some equally extended views may be obtained from Harrow Hill, which from rising in a sort of insulated manner, forms a prominent object for many miles around. Middlesex is a well cultivated county; the vast quantities of manure from the metropolis have been of great service in improving the land; and on this account the produce is some weeks earlier within a few miles contiguous to London, than at a more considerable distance."

3.4.1 Hampstead Heath

In our 2003 Report section 3.2 (Goodyear and Middleton, 2004) we discussed the following text:

"An Illustrated Natural History of British Butterflies; 71-77 [1874]". Purple Emperor by E. Newman.

"Middlesex. Caen Wood, near Hampstead - J. F. Stephens."

We have tried to find the original source of this record. Colin Plant in the Butterflies of the London Area (Plant, 1987) dates it as being in the 1850s, which would have been after Stephens completed his Illustrations of British Entomology (Stephens, 1834) and it should also be noted that Stephens died in 1852 (Gibbs, 1903). We have spoken to Colin and his thoughts are that he may well have found the information on an annotated copy of an original journal or book that he had access to when researching his book. We have also investigated the possibility that Caen Wood was incorrectly assumed to mean Ken Wood, as the Ordnance Survey maps used the name Ken Wood a little later, in 1873-1876. There is a Caen Wood in the Ashted Woods complex in Surrey (TQ173594) but here the 1871 map only shows a farm by the name of Caen Farm and the wood seems to be a more modern addition to the complex.

New research has confirmed that Caen Wood mentioned by Stephens is Kenwood, Hampstead Heath (TQ28) and there are several buildings in the area with that name (Walford, 1878; Glentree Estates, 2014).

In 2007 we received an email from Helen Bantock regarding an unconfirmed report from Hampstead Heath; the date is not known but was possibly seen in 2003 or 2004.

"The unconfirmed Purple Emperor sighting was by a woman in the Highgate choir who I just happened to be sitting by in rehearsal three years ago. She lives nearer Golders Green on the other side of the road from Kenwood. But her description was very vivid of a large dark flying butterfly, which almost settled on her dog's back! And she knew enough to know it wasn't a Peacock (Inachis io). At the time, things were very chaotic at home for her, which is why she didn't tell anyone. It was just chance that we started talking. I can't remember her name and no longer belong to that choir."

Helen Bantock - 2007

In 2012 we found a Twitter entry dated 26 July 2012 from the Corporation of London (citycorpheath, 2012) saying that there had been an *A. iris* report at Hampstead Heath and the report was subsequently reported to the HMBC with their end of year records for the Heath.

"One of UK's most beautiful and elusive butterflies - the Purple Emperor (male known as 'His Majesty') on Heath today."

@CityCorpHeath on Twitter

"You may wish to note that a female Purple Emperor was spotted on the heath taking minerals from the edge of a pond that had just had York stone paving laid around. this was during the last week of July. It was seen on Thursday July 26th at around 12:30 in the Kenwood Yard Eco field grid ref: TQ 275875."

Robert Renwick as reported to Andrew Wood - January 2013

Although late in the 2012 season, we went and watched the Spaniards Road, near to the radio mast, as this is the highpoint in the landscape, but with no success. We approached the Corporation of London who initially showed a lot of interest in obtaining a chair lift/cherry picker to watch the area along Spaniards Road. When we re-approached the Corporation prior to the 2013 season using the same contact email addresses - we got no response! We didn't revisit in either 2013 or 2014.

3.4.2 Central London

In 2007 Colin Plant sent an email with regard to a sighting in central London (TQ38). At the time we couldn't think where it had come from but, based on the more recent information, anything is possible!

"Details for the A. iris I mentioned over the phone: on 11/07/07 a female found at c.0830 squashed (well and truly!) on the pavement in Bell Yard WC2 (beside the High Court) by Mrs Anne Rose. She believes she saw the same insect (large dark butterfly) flying in the same place a couple of days earlier. I have the specimen if you wish to see it."

Tim Freed as reported to Colin Plant - July 2007

3.4.3 Harrow

"We looked in 'Harrow Butterflies and Moths' by Bonhote and Rothschild, published in 1895 this evening. No records of P.Es but several records of Large Tortoiseshell in the Harrow area at that time; also a Greasy Fritillary. Those were the days."

John Hollingdale - October 2012

3.4.4 South London

Although not Middlesex, but part of Greater London, an entry considered relevant was found in 2013 on the London Bird Club website (London Bird Club Wiki, 2013) of *A. iris* being seen at Shooters Hill, in south-east London. Woodlands Farm is just opposite Oxleas Wood (TQ47).

"Woodlands Farm, Shooters Hill DA16: Purple Emperor on oak tree in SW corner of Lower Old Coals Field 12.45."

Conrad Ellam - 10 July 2013

4. Essex

4.1 Introduction

In 2012, travel expense funding from Essex Wildlife Trust (EWT) allowed us to assess habitat suitability for *A. iris* across Essex, on EWT Reserves and in other woodlands prior to the July flight season. Our spring visits allowed us to identify several potential target woodlands, with higher densities of willows, and well-defined high points which might be relatively easy to view.

Weather during the spring and summer of 2012 was very poor, which delayed and extended the flight period, making surveying extremely difficult. Despite this, we were delighted to locate *A. iris* at sites in four 10km squares in north-west Essex with a total of five 10km squares since 2011.

4.2 Sightings in 2014

4.2.1 Epping Forest (TQ39/TQ40)

This year's sightings (21st June to 30th July), mostly of single butterflies, came from Pear Tree Plain, Bury Wood, the area of Grimston's Oak / Red Path / Connaught Water, The Gas Ride / Conservators Pound environs (multiple sightings), Warren Hill, Strawberry Pond, Broadstroad and Powell's Forest (Cambs and Essex BC, 2014; Rob Smith pers. comm.; Ken Murray pers. comm.; our sightings). In recent years, records have tended to come from the central area of the forest, slightly to the north of this year's sightings.

The forest, being generally a very long ridge, does not lend itself well to our survey method. However, having searched the forest over the last fifteen to twenty years, we were delighted to locate two discrete territories, in Bury Wood and in Powell's Forest where multiple sightings were made on multiple days. A male was also seen holding territory in Gernon Bushes, and one flight was observed over Warren Hill. In our opinion, the forest landscape holds part of the linked *A. iris* meta-population connected through Essex, Middlesex, Hertfordshire and Suffolk, to its range in central England.

The forest presents a typical *A. iris* situation in that historic records continue to emerge (Smith, 2012) relating to records from the excellent *A. iris* year of 1983. Martin Catt also made his first sightings in that year (Martin Catt, pers. comm.). However, his records were somewhat dismissed at the time. We are aware of a number of other sightings in the following twenty years, with records increasing over the last decade. This is most likely due to improvements in recording, dissemination and communication, aided by the arrival of the digital age and the Internet, as well as climate change and undoubted improvements in habitat.

We communicated with the Epping Forest Conservation Office, in the early 2000s, suggesting favourable rideside and *salix* management. Since then, as sightings have increased, there has been a managed increase in *salix* numbers along the edges of various plains and meads, beside some rides and in regenerated areas previously coppiced for the Nightingale (*Luscinia megarhynchos*). Andrew Middleton recalls a forest fire north of Connaught Water in a 1970s heat wave and drought, subsequent to which *salix* regenerated well in this area and many are still present. In the early 2000s, Andrew also surveyed a line through 500m squares for *salix* throughout the forest (100+ squares), the sample results suggested that there was in excess of the equivalent of an estimated 1500+ large willows to be present at that time. We also proposed a survey for *A. iris*. However, this was not taken up; the suggestion that *A. iris* would be present was met with amusement.

If *salix* continue to be favourably managed in coming years in the forest, egg-laying habitat will increase and *A. iris* numbers should increase in turn. Favourable management seems to have been encouraged by increased records of *A. iris* over recent years. Previously, *salix* seemed to be routinely and widely felled and no simple positive management appeared to be in place.

It can still be very disappointing to see rideside *salix* needlessly felled as part of a 'conservation' task, when other trees such as *quercus* and Silver Birch (*Betula pendula*) might be more easily missed, were they to be felled instead as part of a cycle of beneficial rideside regeneration to encourage, for example, *lonicera*, *salix*, Bramble (*rubus* spp), nectar, habitat diversity etc. However the outlook is very positive for *A. iris* in Epping Forest.

4.2.2 Laurence Drummond's Essex sightings

Laurence Drummond's 2014 report, mostly surveying west Essex

"As usual, the run up to the 2014 Purple Emperor season was full of uncertainties - when to book my holiday? Would they be early, on time, or late (rather unlikely given the year)? Much consultation and speculation ensued and I decided on the period 5th-14th of July and, fingers crossed, hoped for the weather to be suitable to find territories. Most of the sites I visited had been decided on in the spring, being an emperor fanatic, as I drove around either on business or on a birding trip. I'm always on the lookout for willow and suitable looking woods. Two of the woods I was successful in I have driven by many times over 20 plus years, and wouldn't have dreamed to look for emperors there had it not been for the encouragement of Andrew and Liz and their sharing of information

and methodology.

The upshot was that I had my most successful season ever, finding four new territories in west Essex and a probable in east Essex - something to follow up in 2015! At one point it seemed I was finding them wherever I looked and quickly. I think it was a combination of getting the timing right, a little by chance, and, after four years, getting a feel for what makes a good territory, and finally getting to grips with Liz and Andrew's method of looking across the canopy of the wood from outside. More may have been found but the weather broke down on the 10th and 11th, right in the peak of activity here.

I would say to anyone interested in looking for territories: study the OS maps, most importantly visit the area, have a good look around for sallows and suitable groups of large trees at the woodland edge - big ash trees are the key in all the woods I was successful in this year - and access points to view them from before you go on a specific trip. If willow is numerous nearby, you may see activity as early as 12:30hrs.

Most satisfying moments were finding the territory at Parndon Wood (EWT; TL40) near Harlow, finding a territory at Hatfield Forest National Trust (NT); TL51/52), seeing a grounded male at High Wood (TL62) near Great Dunmow on a puddle I had gone back specifically to check; and the day I joined Andrew at Galleyhill Wood (TL30), to watch males gliding and clashing around the Oaks there against a clear blue sky. I could go on - roll on next July."

Laurence Drummond - September 2014

Laurence also located *A. iris* at Eastend Wood (TL52) and Canfield Hart (TL51) in this area. All locations were found by viewing from public areas. His work has shown that there is a solid landscape presence of the species linking south-west and north-west populations in Essex. We have, for many years, commented that the area around Stansted Airport is *salix* rich!

4.2.3 Elsewhere in Essex

We saw *A. iris* again in Galleyhill Wood, the first time in Gernon Bushes (EWT; TL44) and again at Hempstead Wood (TL63) where we have now seen *A. iris* each year since 2011. *A. iris* was also reported from Roughtalley's Wood (TL40) north-east of Epping and not far from Gernon Bushes (Rob Smith, pers. comm.). Previously, working on a 10km square basis, we found the species established in five 10km squares across north Essex (2011-14). We saw them at Hempstead in 2011 but could not confirm it until the next year. Several observers, including Laurence Drummond, have been delighted to find *A. iris* in Hatfield Forest. *A. iris* has also been found to be present in the Hanningfield / Billericay landscape (TQ79/TQ69) (see 4.5.4) and there is much wooded landscape across south Essex to be investigated.

4.3 Correcting dots on the Essex Map

Incorrect dots on the map can have consequences, especially to researchers in future years if they have not been fully researched. Two recent incidences that we have found relate to Essex, and we list these records first.

4.3.1 TQ88

The publication in 2010 of the updated Atlas of Britain and Ireland (Fox and Asher, 2010) showed *A. iris* to be present in two 10km squares in Essex; in TQ79 (see 4.5.4) and TQ88 - both the records had slipped past the county recorder at the time.

The record from TQ88 relates to a transect data entry for Hadleigh Great Wood (TQ88). The recorder was probably Tony Mead, who we believe was the site warden and the transect walker at the time. We understand he had moved away from the area, so if anyone reading this article knows of him, could they please put us in touch. We can't say whether this was a genuine sighting or simple misalignment on the transect sheet and, without being able to speak to Tony Mead, we can't come to any conclusions. It's a shame that it wasn't noticed at the time. It should be remembered that July 2006 was very hot and very similar to 2013 when several *A. iris* were seen in new locations. In January 2014 we also contacted the South East Essex Royal Society for the Protection of Birds (RSPB) Local Group in the hope that someone would be able to pass on an email to him but with no success.

"I received some limited transect data from a few years ago for Hadleigh Great Wood near Southend and the warden recorded a Purple Emperor in amongst the White Admirals. He's retired now so I don't know whether that sighting was ever followed up by my predecessor. I think Hadleigh Great Wood probably does have a fair amount of sallows, there is certainly a boggy area to it that forms the SSSI (Dodds Grove). The transect ran from 2005-07, and White Admirals were recorded in each year. The Purple Emperor record came on 23rd July 2006, during the last week of 4 when White Admirals were recorded. Time between 11.00-11.45am. 26C, F1S wind, 100% sun. I mentioned it to Don Down, a local naturalist, who thought the warden (since retired) who recorded it was reliable. It may have slipped through the net possibly as it was on transect, it's not on our sightings webpage. I did wonder whether the work done for the Heath Fritillary introduction there in the late 1990s made the woodland rides more attractive to the White Admiral that colonised it a few years later. Perhaps it lightened the place up for the sallows too?"

I didn't know that historically Purple Emperors had something of a coastal distribution in Essex. That's certainly the case with White Admirals at the moment."

Rob Smith - July 2011

4.3.2 TQ89

A second example of an incorrect 'dot on the map' was found regarding the map for TQ89 given in Emmet and Pyman (1985) and repeated in Corke (1985) but not in Corke (1997), but again in Smith (2012) - our research lead us to the Essex Naturalist Volume 29 (1952-1956) page 109, where Jack T. Freidlein discusses the development progress of an *A. iris* larva and its subsequent release which became a 'dot' on the map for TQ89, although there is no evidence from his notes that the larva was found in an Essex woodland (Freidlein, 1951; Freidlein, 1952; Freidlein, 1953).

Butterflies and Moths in the North Fambridge area in 1952 by Jack T. Freidlein. Diary extracts.

"February 12th. My solitary larva of the Purple Emperor butterfly (Apatura iris) is showing a green tinge near the "tail" at the willow buds begin to swell, but no movement is discernible.

March 5th. Iris moved from its hibernating stem on to a fresh catkin and began to nibble the tiny leaves at the base.

April 21st. Iris climbed down the stem into the water and nearly drowned.

June 2nd. Iris pupated. A perfect camouflage - the keel of the pupa has a notched edge exactly the same as a willow leaf.

June 21st. My iris emerged - a magnificent male.

June 24th. Released iris after photographing him feeding on bramble and thistle flowers."

However, it was necessary to go back to his diary entry for the previous year, on page 45, titled "Butterflies at North Fambridge in 1951 by Jack T. Freidlein" for more detail or an explanation. Here he mentions his key highlights and opinions on the presence of *A. iris* in his area.

Butterflies and Moths in the North Fambridge area in 1951 by Jack T. Freidlein. Diary extracts.

"On 1 August we journeyed to the Stour in north-east Essex to a famous wood mentioned in the old butterfly books. This wonderful wood is perfectly fitted out for Purple Emperors but, although we worked all the rides and outskirts, none was seen. How they have been wiped out in such a large impenetrable wood is a puzzle to me."

"Outside our county I had the good fortune to see Purple Emperors in flight; one enormous female at six feet range. How I wish these magnificent insect occurred locally. I do not see why the Purple Emperor should not be found in our woods. If they were in the county years ago, why not now?"

There is no mention of his larva but in the Entomologist Vol.84 (1951) pp.236-237 (Freidlein, 1951) you find his notes on observations of a tiny *Apatura iris* larva.

**Entomologist Vol.84 (1951) pp.236-237
Jack T. Freidlein "*Colias crocea* (Clouded Yellow) and *Apatura iris*"**

"... which eats the willow leaf in small doses, then goes back to the edge of the leaf, head pointing to leaf stalk. Four days old and always seem to be in the same place even though the hole in the leaf grows ..."

Again, there is no mention of the source of the larva, and only further discussion of sightings locally of *Colias croceus* on lucerne fields. However, for some time, this reference was mapped as a dot on the map despite it almost certainly having been acquired either by purchase or an out of county find.

4.4 Further Historic Reports

In addition to the records mentioned at the beginning of this section, we have included the following reports and extracts as they are all relevant to our recent study in Essex. More Essex historic reports can be found in Appendix II of our Hertfordshire Purple Emperor report (Goodyear and Middleton, 2003).

4.4.1 The Historical Landscape of North-East Essex (TM12/TM13)

Douglas, J. W. (1842) Captures of Lepidoptera in July during an excursion of four days between Walton-on-the-Naze and Brightlingsea, Essex. Entomologist: 1. pp.384-385

"Apatura iris was common in Hartley Wood and Riddles Wood: between eighty and one hundred were seen performing their graceful and rapid evolutions about the tops of the oaks and aspens, gliding among the foliage, and not returning to any particular tree, as Haworth has stated to be its habit. From the frequency with which they visited the aspens, and their greater inclination to settle on them, we are inclined to think that the larvae feed on those trees, as well as on the broad-leaved willows. There was not a wet spot to be found in the wood, or we should have tried the method of capture mentioned by Mr. Hewitson (Ent. 324): only four were taken."

4.4.2 Ongar Park Woods (TL40)

Essex Field Club Journal Vol IV 1884

Saturday, July 19th, 1884. Field Meeting, and Fiftieth Ordinary Meeting (Essex Field Club, 1884)

"On this occasion the Club paid a visit to the pleasant wooded country lying at the north-east of Epping, including the most northerly parts of Epping Forest - a district well worthy of being explored. The weather which had been very unpropitious for a day or two beforehand, and even in the morning of Saturday, cleared up in the afternoon, and the rambles were favoured with sunshine and clear skies, only varied by a single brief shower.

The Members assembled at North Weald station at about half-past three, and walked thence to Ongar Park Woods, under the guidance of Mr. James English, who was well acquainted with the district as a hunting ground for the botanist and entomologist, his recollections running back nearly forty years.

Mr. English read the following notes: Ongar Park Woods in the Past, from an Entomological Point of View

*Ongar Park is not so much frequented by the entomologist as it once was, nor even by the ordinary pedestrians who came merely to enjoy a charming woodland ramble. Formerly (that is, between the years 1838 and 1862), the park was one of the best collecting grounds near the forest, and was the home of many rare species of Lepidoptera. In the "ride" which then led from this spot, which is now obliterated, I used capture *Erastia fuscula* and to beat from the willow bushes the splendid larvae of *Apatura iris*, and also to capture the "Purple Emperor" in his perfect stage. In this ride opposite, I have often sat watching these highfliers soaring over and around the oaks, and on the coming of a storm it was amusing to see one of these great butterflies choosing, with apparent care, a shelter under a stout branch till the sun broke out again, and the noble flight recommenced ...*

... After tea at the "Cock Inn" ...

... Cordial votes of thanks were given to Mr. Capel Cure for granting the Club permission to assemble in Ongar Park Woods; to Mr. W.S. Chisenhale Marsh, the owner of Gaynes Park, for a like permission very freely granted; and to Mr. Hugh Miller, of New Farm, for permission to wander in the Hill Hall Woods, also very freely given; and to Mr. English, to whom the President said they were indebted for his guidance. He knew that part of the country well, and its productions both animal and vegetable ..."

4.4.3 The Fauna of the London District

Transactions of the City of London District Entomological and Natural History Society. For the year 1898 (Buckell and Prout, 1902). Lepidoptera compiled by Dr FJ Buckell M.B.; edited, with the additions added subsequent to 1893 by Louis B Prout F.E.S.

Page 55. "33 - *Potamis iris* L. | Woodford (G)."

Volume VIII is pre 1898 so we assume seen between the list compiled by Fitch (Fitch, 1891) and Buckell and Prout. L = assume Linneaus as larvae referred to as I not L? I = North Eastern Division of district. G = W Gates (We believe to be recorder).

4.4.4 A Guide to the Butterflies and Larger Moths of Essex. Essex Naturalists' Trust, Colchester

Firmin, J et al., 1975, p.9 (Firmin et al, 1975). Extracts from Historical Survey

*"There was great excitement in July 1695 when Ray was presented with a specimen of *Apatura iris* L. (the Purple Emperor) captured by a Mr Courtman at Castle Hedingham."*

"Dr. Alan Maclean, a Colchester physician with an all-round interest in natural history, studied Lepidoptera in the first half of the 19th century. Although he was better known as an ornithologist Dr. Maclean made a number of important observations of butterfly life histories. He successfully reared the Purple Emperor and the White Admiral and was the first naturalist to make a thorough study of the hibernation of the latter. He noted its protective habit of spinning up a hibernaculum from a honeysuckle leaf. In Maclean's day the Purple Emperor had still not vanished from the woods around Colchester. He found eggs and larvae on willow bushes in High Woods, Colchester, and also at Dedham and Langham, and he told friends of his pleasure in watching the male butterflies soaring around the tops of the oaks."

Page 28-29. *Apatura iris* L. (Purple Emperor)

"Very rare; probably extinct. Of this aristocrat among our native butterflies the VCH stated that it had been exceedingly rare, while adding that it seemed to have occurred in all the larger Essex woods in the past and 'doubtless still existed in some of them', Among old records in the literature, outstanding is one of the 80-100 seen in woodland at St. Osyth in 1842 (Entomologist, 1: 384). Since the turn of the century there have been several renowned reports of its occurrence in various localities, but the only record regarded as fully authentic concerns a single insect which was well seen in a wood at Weeley in north-east Essex c.1956 (ADB). What was almost certainly another was watched in East Wood, Colchester (a traditional locality) c.1953 (AI)"

ADB is listed as A D Blaxill (we believe to be the recorder). AI is listed as Miss A Impey (we believe to be the recorder).

4.4.5 Essex Naturalist (New Series) No. 8 (1985)

The larger moths and butterflies of Essex. Emmet and Pyman. The Changing status of Essex Butterflies by J. Firmin p.15 (Firmin and Pyman, 1985)

"The purple emperor (*Apatura iris*) was once locally common in the larger woods of north Essex but by the turn of the century it vanished from these sites around Colchester and in the Vale of Dedham. The reasons are not clear as the habitats were not subjected to drastic change and there were plenty of willow bushes on which the females could lay their eggs. It is generally considered that the eastern counties' purple emperors were severely affected by cold winters and cooler summers compared with the warmer, more congenial climate to be found in the south of England where this fine, big butterfly is still to be found in reasonable numbers in the larger oak and beech woods. The sighting in 1983 of a purple emperor in the Epping Forest area has given rise to eager speculation that a colony could have survived undetected over the years or that the species is attempting to recolonise the county from sites to the west. A male purple emperor was also found in a house at Wivenhoe in the summer of 1982 and a search is being made of woodland in the area which might be supporting a relict colony."

4.4.6 Is Essex a Poor County for Butterflies?

David Corke (Corke, 1985). Recolonisation and reintroduction p.21

"The same [natural arrivals] cannot be said of the sighting of a purple emperor in Epping Forest. A specimen released by one of the many lepidopterists in the London area seems a more probable explanation than immigration from a distant colony or the undetected survival of a colony since Victorian times."

4.4.7 The Butterflies of Essex, Lopinga Books

David Corke 1997, pp.112 - 113 (Corke, 1997). Purple Emperor *Apatura Iris*

"Status

Extinct as a breeding species since before the First World War but with very rare vagrants.

Habitat and larval foodplant

Requires large tracts of woodland with willow (*Salix* spp: the larval foodplant) growing in full sun at the edge of rides or glades and mature (often oak) trees (master trees) around which the adults congregate for mating. Adults feed mainly on honeydew in the canopy, combined with mud-puddling, carcass and excrement feeding by the males. Neither sex feeds on nectar.

History

It is probable that the first collected specimen to be described came from Essex, collected at Hedingham Castle in 1695 and described by John Ray (1710). The first caterpillars to be described in Britain also came from Essex: beaten from willow bushes in Brentwood on 26 May 1758 by Dru Drury, he gave one to Moses Harris who described its appearance and rearing to adulthood in *The Aurelian* (1766).

Its main centre of distribution by the mid to late 19th century seems to have been the same north-east Essex woods favoured by the white admiral, although it was known from Epping Forest, sometimes quite commonly, until the end of the 19th century and there are a few records from the Saffron Walden area at that time.

The decline seems to have gone unnoticed but no records exist after the First World War other than of occasional individuals which seem to have been vagrants. The most recent record is of a specimen inside a house in Wivenhoe on 20 August 1983 (Goodey and Firmin, 1992) and two sightings by M. Catt in Epping Forest in 1983 (Emmet et al., 1985). The latter I regard as unconfirmed or possibly the result of a clandestine release.

Conservation and ecology

Normally purple emperors live at low density and a single colony can cover several small woods. The reduction in the total number of woods and the limited suitability of those that remain (willow in sun and some large 'master' trees are required) is probably the reason for the final loss from Essex in the north-east. This does not apply to Epping Forest where a very large area of mature woodland with reasonable areas of willow exist. Possibly lack of enough willow may have been a problem in the past but this does not seem to be the case now. The possibility that, close to London, feeding on polluted honeydew and sap-runs was the problem is considered in chapter 5. See chapter 7 for a discussion of the possibility of attempting a re-establishment in Epping Forest."

The extract from chapter 7 has not been included.

4.4.8 Bentall, S.R. (1875) Under Entomological Notes and Captures. Entomologist: 8. p.182

"*Apatura Iris* (Entom. viii. 159). - This butterfly we occasionally see in a wood in this neighbourhood. I was away from home last year while the insect was out; but it was observed several times by my father, the late Mr. Thomas Bentall, feeding on dead moles, and he succeeded in capturing one specimen (a male) at this high-flavoured food. I have to-day bred a specimen (a female) from a larva beaten from willow on the 5th June, and which became a pupa on the 15th. - S. R. Bentall; Nightingale Hall, Halstead, Essex."

The reference relates to Edward Newman as editor of the Entomologist on page 159 of Volume VIII noting, after an item titled "BAIT FOR APATURA IRIS", "I shall be delighted to record the experience of others. Although I have said so much about the capture of this magnificent insect, I never had the pleasure of taking it myself". - Edward Newman.

4.4.9 A natural history of Butterflies found in the neighbourhood of Halstead with descriptions and life-sized figure by S. R. Bentall of Nightingale Hall, Halstead, Essex 1874 pp.59-64 (Handwritten notes)

"16. Purple Emperor. *Apatura Iris*, Plate X

♂ Ground colour rusty black, adorned with purple reflections and having a white transverse band commencing about the middle of the fore wings and extending across the hind wings, also several white spots on the fore wings for position of which see figure.

♀ without the purple gloss, and having the white markings tinged with yellow. Underside more beautiful than in the male.

This species, like *Sibylla* is subject to variation, in the partial or total absence of the white band & spots.



Figure 9

Life History: The egg is deposited on the upper side of a sallow leaf, which is the caterpillar's food-plant. The juvenile caterpillar is hatched in about 9 days or more, and is at first dark brown. When 8 days old it changes its skin when it is of the same tint as the leaf on which it feeds. It is now furnished with two little horns on the head: there are proportionally longer and larger than when the larva is older.

It fastens itself firmly to a twig in the autumn and remains securely there till the following spring, when it wakes up, and after feeding greedily till June, again attached itself to a twig of its food plant, and turns to a chrysalis. The butterfly is produced in July.

I have already described the general outline of the caterpillar in giving the characteristics of the family to which this species belongs, I will therefore now give a more minute description.

The surface of the body is covered with numerous minute warts, giving it a rough appearance.

There is a narrow medio-dorsal stripe, and several oblique lateral ones. The colours are green, yellow, and white but space forbids my going minutely into the disposition of these colours, and besides, the whole caterpillar is so peculiar in form, that it would be almost impossible to confound it with any other British species.

The chrysalis is apple green, the wing-cases being rather darker, and the lateral stripes of the caterpillar are still visible.

The habits of this insect are rather peculiar: It generally flies very high, about the tops of the oak trees in large woods: it will however occasionally leave its lofty throne, especially if baits are prepared, the most attractive of which are dead animals and other delicacies of a similar nature. The time to spread these banquets is early in the morning. They may be hung on low bushes, so as to be within reach of an ordinary net, but care must be taken to fix the bait firmly, and not to strike too roughly for I have known a case of the bait getting knocked down and the butterfly of course escaping. *Iris* is also occasionally to be taken when settled on a lofty oak bough by means of a long pole fastened to the net, but the most sure method of capturing is with the unsavoury baits mentioned above. Sometimes specimens are found in pigsties. If a female be taken, and kept alive, the opposite sex may be attracted, if secured as soon as possible after her birth.

Localities :- Local and rather rare.

Formerly in several woods near Colchester but now believed to be extinct.

Mark's Hall Woods.

One was taken in this house many years ago by Miss Hobbs."

An example page is given in Figure 10.

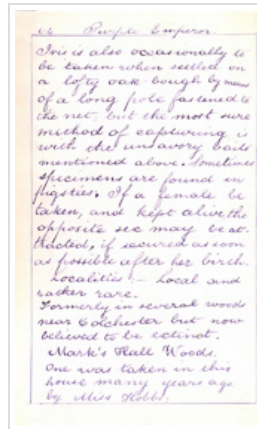


Figure 10

In January 2015, we received in the post from Brian Garner a copy of this delightful handwritten journal. We are most grateful to Brian for sending this to us for inclusion in our report.

4.5 Recent sightings 2011 - 2013

4.5.1 Duddenhoe End (TL43)

On a July evening in 2011, Liz Goodyear received a phone call from David Ruthven, a very experienced and respected member of Norfolk Branch of Butterfly Conservation. He rang to say his son Simon had reported to him that he had seen *A. iris* whilst working in the Duddenhoe End area. Andrew Middleton subsequently spoke to them both and heard more about the historic records from Foxley Wood in Norfolk (see section 6 - Norfolk). The butterfly was seen on 7th July 2011. Simon was gardening around the house on the lane to Rockell's Farm at around 11am and a large dark butterfly, with the classic white banding of *A. iris* was flying around, onto the roof of the house, into the porch, then dipping down towards the water of the pond. Simon saw the purple and has been on several trips to Hampshire with his father to see *A. iris* so is familiar with the species.

The house is a field away from Rockell's Wood, which is quite high, has *quercus*, and probably *salix* as well. The wood is a shooting/game wood, where we have noted in several examples conditions can favour the retention of *salix*. We are not sure of the *salix* status around the fishing lakes at Rockell's Farm, but we are keen to meet up some time to have a look around together.

On 15th July 2011, Andrew Middleton went to the area around Langley High Wood and saw a male on territory in a nearby small area of woodland. We had visited Langley High Wood, with the landowner's permission, in 2003 and recorded *A. paphia*. Taking into account that this was close to an historic area for *A. iris* (Goodyear and Middleton, 2003) we felt then that the area had great potential.

4.5.2 Garnett's Wood (Essex County Council; TL62)

In 2011 a female *A. iris* was seen in Garnett's Wood, a small wood south of Great Dunmow.

"Carl Blamire said that I should let you know of a Purple Emperor sighting. I saw and photographed it in Garnetts Wood (High Easter Road from Bamston) on 13/7/11. It was a fairly warm sunny day and was sitting on a nettle on a ride in the Hazel coppice with Oak standards area of the wood. I believe this is fairly unusual?"

Tom Hamilton - July 2011 (Cambs and Essex BC, 2011)

Habitat assessment in 2012 concluded that there is ample reason for *A. iris* to be seen here and, in the summer of 2013, Laurence Drummond confirmed a male at a presumed assembly area.

4.5.3 Hatfield Forest (NT; TL52)

In July 2013, we were alerted to photographs on a Flickr photo sharing website page (Hornet Photography, 2013) of *A. iris* at Hatfield Forest. The accompanying comment added that these were the first sightings since the 1970s. Liz Goodyear queried this online with Peter Herring, the photographer and his response was that he hadn't any details of sightings in the 1970s, it was what the National Trust warden had told him.

"Multiple sightings of Purple Emperor in Hatfield Forest: Three purple emperors along the rides in Hatfield Forest. First sighting since the 1970s. I saw them along the ride by Elgins coppice. It is called London Road on the map. It is the gated ride leading from the big field by the car park and Nat Trust office which then leads down towards the lake. I have marked locations on the white

board by the cafe."

Peter Herring - 18 July 2013

4.5.4 Hanningfield Reservoir and Norsey Wood, near Billericay (TQ79/TQ69)

The publication in 2010 of the updated Atlas of Britain and Ireland (Fox and Asher, 2010) showed *A. iris* to be present in TQ79. This is an example of where a dot on the map slipped through the net and this record is even more remarkable as it even initially passed us for a few years, as we had thought that this dot related to the mapping of the Marks Hall releases (see Appendix B.1) but, as we should have known, that site is in TL82! Research led us in September 2012 to the Essex Birdwatching, Winter/Spring 2009 Issue no. 113 (Acfield, 2009). Somehow the record had reached the national database (Fox and Asher, 2010) without anyone noticing!

Hanningfield Reservoir by David Acfield

"July... A very worn Purple Emperor by the Southern lagoon was a surprise addition to the reservoir list on the 13th. (July 2008)"

And in response to a letter from Rob Smith asking for more information: David Acfield wrote:

"With reference to your letter: The date was 13/7/08.

The butterfly was very worn, exhausted and unable to fly far if at all (photo sent). Only the wings were found next day. Predated?

The grid location is accurate - beside the South lagoon at Hanningfield Reservoir. It was the first and only record for the site. It is a sallow rich area.

Those I mentioned it to suggested it was from the Marks Hall re-introduction but I am in no position to judge. I would of course be interested if you reach any conclusions."

David Acfield - 2012

Sadly, another comment regarding introductions but, in 2013, we heard of two reports of *A. iris* being seen at nearby Norsey Wood, near Billericay (TQ69) (Rob Smith pers. comm.), a wood we had visited in the autumn of 2012 following on from the news that, in 2008, there had been this report from Hanningfield Reservoir. Our evaluation, at the time of visit to the area, concluded that the *salix*-rich habitat was more than capable of supporting *A. iris*!

4.5.5 Additional sightings 2012-2013

A. iris has been recorded in 2012 and 2013 from:

- TL53 - woodland in the Debden area (Rob Smith, pers. comm.) and the Wigginton area.
- TL63 - Hempstead Wood.
- TL73 - woodland in the Gosfield area.
- TL82 - woodland in the Earls Colne area.

We have chosen not to disclose the exact location in this report for some of our sightings in view of the releases at Marks Hall (see Appendix B).

4.6 Acknowledgements

We would like to thank Rob Smith of the Cambridgeshire and Essex Branch of Butterfly Conservation (Cams and Essex BC) for keeping us updated with sightings during the flight period.

5. Suffolk (including Balsham Wood, Cambridgeshire) 2013 and 2014

Balsham Wood, Cambridgeshire, is included as part of our survey of south Suffolk and north Essex claylands (Character area 86 - Natural England (NE)).

5.1 Introduction

In 2013 we located our first assembly area in Suffolk, in woodland not far from the Essex/Cambridgeshire/Suffolk county boundary, and in the same year we also located a very active assembly area at Balsham Wood (TL54), a short distance into the county of Cambridgeshire.

As in 2012, when we surveyed numerous Essex woodlands for suitable *A. iris* habitat (see Section 4 - Essex), we conducted a similar survey in Suffolk in the spring of 2013. We subsequently identified several areas of woodland that we felt could support *A. iris*. The areas selected were based on historic records and modern suitability i.e. *salix*-richness with easily viewable potential assembly areas, despite the underlying problem that many of these Suffolk woods were relatively flat.

Our 2013 survey was supported by the Suffolk and Hertfordshire and Middlesex branches of Butterfly Conservation, the Robert Kiln Trust and a private sponsor. Although there was initially a lot of scepticism that *A. iris* could be naturally present, we were determined to prove

that, following our 2012 success in Essex, we could repeat this, at least in a similar landscape in Suffolk.

One of the woods selected in the 2013 winter survey was wood 'A'. We will not name the wood as the landowner's representative has denied Suffolk Branch access, despite being in annual receipt of many hundred thousands of pounds of public money (nationalarchives.gov.uk, 2013).

5.2 Sightings 2013

On 22nd July 2013, from the vantage point of a roadside verge, initially 300 metres from the wood edge, *A. iris* was observed through binoculars. Further sightings were made at a distance of 200 metres about an hour later. A few days earlier, on 19th July 2013, we recorded *A. iris* for the first time at Balsham Wood (TL54). This is a much easier wood to view, with a permissive path close to the wood allowing a relaxed viewing distance of between 100 and 150 metres to the highest parts of the *salix*-rich woodland. The wood is overlooked by a magnificent water tower that is visible for miles around, where we have watched *A. iris* perching on and appearing to use the tower as an assembly area!

In 2013, one grounded male was recorded by Mike Rae in Bradfield Woods (SWT; TL95) which we had identified as having potential, and one was seen in a garden near Halesworth (TM47) (Rob Parker, pers. comm.); and at Bonny Wood (SWT; TM05), which we had identified as having great potential; there was an almost certain sighting (Julian Dowding, pers. comm.).

5.3 Suffolk survey work and sightings in 2014

In 2014, HMBC provided some financial support and the SWT funded a report on our visits to their Reserves. We also received a small private donation. However, much of our 2014 survey work was self-funded. Several potential woods had already been identified in 2013. However, in terms of *A. iris*, it was still uncharted territory and even with our experience in Essex, we still didn't know when the Suffolk flight period might be. In 2013, the season had started nationally late but, in 2014, before we knew it, there was a sighting of *L. camilla* from Wolves Wood (RSPB; TM04), near Hadleigh, on 6th June 2014 (as we were first writing this report in September 2014, there were reports of second generation *L. camilla* in Suffolk and Essex as well as Norfolk (UK Butterflies (2014)) indicating that in some years these areas appear to be ahead of Middlesex and Hertfordshire). The *L. camilla* sighting was a UK first for 2014, with one in Essex on the same day (Butterfly Conservation, 2014) which implied that Suffolk could be earlier than we originally thought and *A. iris* followed nationally on 17th June! (Butterfly Conservation, 2014) Middlesex reports (see section 3 - Middlesex) didn't start until 21st June, so we simply didn't know when to start looking in Suffolk! Our first foray was on 25th June when we did a tour of some of the known sites in north Essex and visited Balsham Wood in Cambridgeshire. Sightings were few, but we were confident they were flying.

On 28th June, we returned to Balsham (which we use as a benchmark), but the weather forecasters managed to get the local forecast wrong and we endured several deluges of rain just at the prime time of day when *A. iris* should be flying; we went home disappointed.

On 30th June we returned to Suffolk and initially went to Northfield Wood (WT; TM05/06) just west of Stowmarket. We felt that the east of the county may have an earlier emergence than the west. This is a *salix*-rich wood and, whilst lacking a definitive viewable high point, there are a few big mature *quercus* spp. in the centre of the wood; if *A. iris* is present here, we haven't found where they hold territory. We did see *A. paphia* and *L. camilla* in good numbers, and White-letter Hairstreak (*Satyrium w-album*), but Purple Hairstreak (*Favonius quercus*) was still not flying. The near absence of *F. quercus* throughout all our visits baffled and confused us, as in a normal year they should be flying alongside *A. iris*. Our conclusion, based on discussion with other recorders, was that the species was having a 'bad year' at many sites. We then returned to Balsham Wood where we had confirmation that *A. iris* was definitely flying on the Cambridgeshire/Suffolk border.

We returned a week later, arriving at wood 'A' on 6th July at 14:30, where we sat on the customary road verge with our chairs and binoculars whilst cars whizzed past, and started watching. Initially it was overcast but then, with some periods of good sunshine, we were rewarded between 15:45 and 16:00 with several flights and clashes of *A. iris*. Because of the access situation we can only watch the top edge of this *salix*-rich wood, which is quite exposed and often windswept. No doubt within the wood there is an area with suitable prominent trees that *A. iris* prefers, but we are unlikely to be allowed access to find it.

On the same day we received an email from Bill Stone, the butterfly recorder for Suffolk. He had been watching wood 'B', identified by us in 2013 as highly suitable for *A. iris*. This is a large private wood with a few public and permissive footpaths. However, the landowner takes great care of his woodland for wildlife and had very kindly given permission so that we (together with Bill Stone and Rob Parker) had full access to the wood. Bill reported some very 'Emperor-like' behaviour around some *quercus* spp. close to a *salix*-rich area. We arrived next day (7th July) at 09:15 and initially saw *A. paphia* and two *F. quercus* but *L. camilla* was not recorded. Having watched the *salix*-rich areas for *A. iris* we decided to take a walk around the tracks and through a wood-yard. Beyond the wood-yard was the Keeper's Cottage. Andrew walked wide and slightly ahead of Liz, who was thinking 'how pretty the cottage was' when, at 11:00, a male *A. iris* flew up off the ground by the gate. We were able to see the butterfly soar over the cottage roof and along the tree line at the back of the garden, never to be seen again. Bill later confirmed that, on his visit, there had been a dog in the garden and we suspect that, just beside the gate, was its regular 'peeing point', as almost immediately we saw a Comma (*Polygonia c-album*) come down on the same spot! In our excitement, we went off to Northfield Wood but only later realising, when we arrived, that we had left our chairs there hidden under a tree. We have since heard of two further sightings at wood 'B' in 2014, seen by people that live close by! (Rob Parker, pers. comm.). At Northfield Wood, *L. camilla* and *A. paphia* were flying, as were *S. w-album*, but despite our best efforts we couldn't find *A. iris*. We returned to wood 'B' later in the day to reclaim our chairs and then watched all the potential high points. We were delighted to watch through binoculars *S. w-album*, late in the afternoon, spinning around a tall and large area of mature Elms (*ulmus* spp.)!

Next day we visited Bradfield Woods, where a single male *A. iris* had been seen in 2013 but, despite spending a lot of time watching all the key rides (this is a very popular wood for dog walkers), no grounded males were observed, nor females. The wood is very flat and identifying a useable high point is very difficult and our attempts were in vain. We then drove around the area, stopping and looking at

other potential high points from across the landscape. We visited Thorpe Wood (TL95), which is close to Bradfield Woods, but it became too cloudy, so we returned home via Balsham with, again, no success.

A week later, on 14th July, we were alerted by Bill Stone to a report of a male *A. iris* in a garden near Hartest (TL85), which is close to Stanstead Great Wood (FC; TL84); again another wood identified by us as having potential. This is a well-wooded landscape linking up the sites found so far. We looked at several woods in the locality the following day and then concentrated on those in the Chadacre Estate (TL85). The woodland is private but there are several public footpaths with good vantage points across potential assembly areas and the area has numerous *salix* spp. Despite watching the area for much of the day in ideal conditions we, again, went away disappointed.

On 15th July we returned to Northfield Wood for an early morning ride inspection and then went on to Bonny Wood, our first visit there in 2014. It was a lovely sunny day and we watched the *salix*-rich areas within the wood first, proceeding then to a public footpath at a point midway between Bonny Wood and Priestly Wood. We spent a considerable time watching the high points in perfect conditions before returning into the wood. Unbeknown to us at the time, Julian Dowding, who made the unconfirmed sighting here in 2013, had recorded two *A. iris* here in 2014; a male on 7th July (when we had our grounding in wood 'B'), and a female on 14th July (Bill Stone, pers. comm.), when we had been looking at woods in Norfolk. That is the luck of the game, but we are very pleased that *A. iris* has been seen in or near several woodlands which were found, through our surveys, to hold suitable habitat. It's also pleasing that, following our field-work and Suffolk branch presentation in 2013, a number of Suffolk recorders have taken our suggestions seriously and have got out in the field and actually found *A. iris* - fantastic.

Our final visits were on 20th - 22nd July at Balsham (when good *A. iris* activity was observed), Assington Thicks (TL93) near Sudbury (and not visited by us since 2012) and Wolves Wood. We also looked at Stack Wood (TL94) near Polstead Heath, which is in a *salix*-rich landscape. At Wolves Wood we had some tantalising sightings of something that looked Emperor-like but, like so many other years, we just have to wait for another year!

Bill Stone also had reports of *A. iris* from the Holton area on two occasions. Holton is a short distance from the Halesworth garden report of 2013, so the species appears to be well established in this landscape. We also heard of a record from 2013 of *A. iris* being seen in a garden by a schoolgirl in the Euston Park area (TL87) (Paul Harrison, pers. comm.), echoing a sighting by Mike Rae from the area in the 1980s (see 5.4.2).

"I asked the (school girl's) mother about the sighting. She cannot remember much other than it was a single specimen nectaring on their buddleia sometime last summer. Although she knows a bit about butterflies, her mother having been an entomologist, she didn't realise that Purple Emperors were anything to get excited about in this area! They have not spotted one this year but will keep a good lookout next summer; I have also recruited several of their neighbours to look out as well."

Paul Harrison - September 2014

Whilst we are a little disappointed that we were unable to locate a new assembly area in Suffolk in 2014, positive habitat surveys coinciding with the above records indicates that *A. iris* is present in the Suffolk landscape, although at very low discrete levels.

We suggest that *A. iris* has been in the Suffolk landscape for many years, if not always. We were delighted to find *A. iris* in the first year of our Suffolk survey. Each year we seem to find a few more historic records from the Eastern Region, and we do wonder where and how many times *A. iris* has actually been encountered over the decades.

We believe *A. iris* is now being seen in its historic Suffolk landscapes because of a combination of increased recorder effort, better communication, the gradual return to broad-leaved forests, positive management and retention of *salix* spp., and an acknowledged change in climate. Whatever the history, the outlook for the species is favourable, and hopefully populations will continue to prosper and more locations will be found.

Our assessments are based on wide experience and hard work, where we may have taken a decade or more to finally locate a small, maybe hidden area where a few *iris* will be seen, and maybe in a wood with no *salix*. When considering histories, we have found first-hand accounts to be invaluable, often in contrast to assessments given by the inexperienced. There are also oddities in that, whilst our first decade was spent finding *A. iris* in Middlesex and Hertfordshire where there were only a few historic records, when we conducted a search of the entire *A. iris* collection at the London Natural History Museum, we found no specimens from Hertfordshire or Middlesex, but there were specimens from Essex and Suffolk, as well as more historic records. Some of these historic woods do not presently look that great for *A. iris* in terms of habitat.

5.4 Suffolk - historic updates and additional information

5.4.1 The Millennium Atlas of Suffolk Butterflies 2001 Suffolk Naturalists' Society

Richard Stewart (Stewart, 2001)

A. iris is listed as extinct with no dedicated section.

5.4.2 Euston Park area (TL87)

In July 2013, Mike Rae observed *A. iris* at Bradfield Woods, his email at the time made mention of a previous 'recent' sighting:

"A few years' is a loose term, especially as I get older! The year I saw the PE was 1985 mid July. Grid ref 9100 7850. This is on the Euston Estate in a field call Rubbinghouse Spinney on the OS Explorer 229 sheet. I still remember the sighting very well.

I remember, 1985 mid July, late morning, hot sunny day, I took a break from stacking Heston bales (big!) with a Teleporter tractor in the middle of the field. I saw a male PE sitting on the tractor, I saw it from a range of 1.5 metres but did not go closer in case I disturbed it. I watched it for at least a minute opening and closing its wings when it flew strongly in a westerly direction towards Rubbinghouse Spinney. I am absolutely certain it was a Male PE.

I did not report this to any recording body at the time. In the 70s and early 80s I ran a MV lamp to catch moths and often got "exotic" visitors, it did not occur to me to report these sightings at this time either. I do try to report the things I see now, hence the Purple Emperor in Bradfield Woods seen by me and my wife this summer."

Mike Rae - January 2014

5.4.3 Bury St. Edmunds area (TL86)

Bury St. Edmunds

"Bury St. Edmunds on 24th July 2009. An unconfirmed report came from a lady who saw it (*A. iris*) through binoculars under the eaves taking shelter during a heavy rainstorm. She lives in an urban area near the brewery, which does have some sallow, but is not really habitat for PE?"

News via Rob Parker - 2012

One of the more recent historic reports from Suffolk had been from Nowton Park, just south of Bury St. Edmunds in 1947 (Mendel and Piotrowski, 1986).

5.5 Acknowledgements

We would like to thank Bill Stone and Rob Parker of the Suffolk Branch of Butterfly Conservation for their continued support, and keeping us updated with sightings during the flight period.

6. Norfolk

6.1 Introduction and background information

Norfolk continues to fascinate us! Ever since we got a message from Pat Bonham in 2004 that *A. iris* had been seen in woodland near King's Lynn on 26th July that year, we have continued to wonder where or when we might find the species in the county. The report of our site visit with the observer says:

"... Mr. [Tony] Tipper confirmed that he was walking along the path, when at 2.20pm, a male Purple Emperor came down through the conifer canopy to about 10 feet above his head and circled around him and then flew off. We have no doubt that his identification is correct. Saw purple sheen and white banding, large size c2¾ inches. Mr. Tipper is a keen walker and does not own a car and each week he likes to take a long walk around the countryside in the King's Lynn area, the one on 26th was around 11 miles he said ..."

Liz Goodyear and Andrew Middleton - July 2004

The sighting was late in the season, suggesting it was probably not a captive bred specimen and, additionally, it was in an historic area (see Figure 11).

We have yet to conduct any winter habitat assessment surveys but, in mid-July, we did visit the King's Lynn area and, in particular, the woodland where the 2004 sighting was made. We watched various high points and a corridor of mature *quercus* trees beside the road. It was a lovely sunny day but relatively late in the 2014 season and, sadly as so often happens with our survey work, we came home disappointed. However we did record *L. camilla* and *A. paphia* that day.

Most people that haven't visited Norfolk believe it to be relatively flat, with no significant hills. This isn't correct, although the marshland landscape of the Norfolk Broads and parts of the north Norfolk coastline are low-lying with much at sea level. Some areas of the county are quite undulating and there is quite a variety of landscapes with differing geology. The highest point in Norfolk is only 105m at Beacon Hill, near West Runton on the north Norfolk coast (Hill-bagging, 2014). There are several areas of woodland, some of which still remain coniferous (in particular around Thetford) or in part a mixture of conifers and broad-leaved woodland, and there are some woods with good prominent 'high' points. The Broadland landscape is famous for boating, bird watching and the Swallowtail (*Papilio machaon*) butterfly, but the landscape also supports *L. camilla*. The modern Broadland landscape comprises vast areas of marsh, either reed-beds or grazed, but the lack of continuous management has meant that some areas of marshland have been taken over by shrub and trees, including Alder (*alnus* spp) and *salix*. There are several remnant wooded carrs which also include *quercus* and *lonicera*, and the appearance in places is reminiscent of Woodwalton Fen (see section 7 - Cambridgeshire).

Our survey work in 2013 in Suffolk included the Waveney Valley (part of the Norfolk and Suffolk Broadland landscape so included in this

discussion) and, in particular, woodlands around St. Olaves which has a record from 1946 and also a more recent record from a garden near Flixton Decoy in 2003 (Colin Ayres, pers. comm.).

The Butterflies of Suffolk, Suffolk Naturalists' Society, Ipswich (Mendel and Piotrowski, 1986)

"A 20th century sighting away from the woodlands of the south east of the County is: A very ragged ♂ taken (on rotten rabbit guts!) 29 September 1946 at St. Olaves [H.E. Jenner]"

The area around St. Olaves forms part of Norfolk and Suffolk Broadland landscape (an area that Liz Goodyear knows very well). The marshland valley areas are *salix*-rich surrounded by the occasional gentle hill rising up on 'the valley' side. *Quercus* (some quite mature) is numerous and, on occasion, they are right on the edge of the marsh (not necessarily at a high point) creating the ideal habitat, which, again, is similar in some respects to the *quercus* at Woodwalton Fen.

In our 2004 and 2005 report (Goodyear and Middleton, 2006), the historic sightings that we could find were documented but, in brief, *A. iris* was reported as not being seen in Norfolk since the 1970s when it is thought that the remaining colony at Foxley Wood (Norfolk Wildlife Trust (NWT); TG02) near Bawdeswell had become extinct after enduring many years of totally inappropriate woodland management, including the felling of the master tree at one point (Wild and Ashton, 1997; David Ruthven, pers. comm.). See Norfolk historic updates for further discussion.

In addition to Foxley Wood, there were historic reports from other woods in the vicinity (Wild and Ashton, 1997), as well as Whittlingham, near Norwich and in the west of Norfolk near Dersingham (Barrett, 1901).

However, in 2013 we started to do some more research into records and these are listed in the updates in this article. In particular, we followed up a reference noted in a report relating to Foxley Wood. Here it said that *A. iris* was known from the Broads but doesn't give any examples or detail, but in the references was listed: Mason, C.F., 1976. Broadland, 79-98. In *Nature in Norfolk* (Norfolk Nat. Trust) Jarrod and Sons, Norwich. Through the Internet we were able to track down Professor Mason and this was his response!

"I do remember the occasion. I was sampling aquatic invertebrates from a boat at Upton Broad near Acle on a warm, sunny July morning. Two large butterflies, gleaming purple and white, were gliding around the waterside willows. However, I strongly suspect it may have been a misidentification. I had been watching Lesser Purple Emperors in France some two weeks previously but had no previous experience of either Purple Emperor or White Admiral, being a young naturalist from a county, northwest Leicestershire, where neither occurred. I think inexperience and youthful exuberance took over and, as I was writing the article at the time, I put the record in. I suspect they were White Admirals, though the many individuals I have seen since have never looked that colour to me. With so many people looking for butterflies now, and with Upton now being a nature reserve, if Purple Emperors were present still, they would have been spotted. So my record is at best to be considered unproven."

"At the time I was working at Upton it was owned by the Norwich Union and used by their angling club, with just a single boat, so not much used. The adjacent woodland (The Doles) was very wet and impenetrable and I doubt received visits from naturalists. Though part of Norfolk WTs Upton Marshes reserve now is open, the broad and doles are still inaccessible to members. My record relates to July 1974, though I do not recall the date."

Chris Mason - January 2014

L. camilla is noted as present at the Upton Fen and Broad Nature Reserve (NWT; TG31) but this was 1974 and only a few years after the last reported *A. iris* at Foxley Wood. And, as we have reported elsewhere, the assumption that they should have subsequently been seen at Upton Broad would not, in our opinion, be correct.

We also heard mention of *A. iris* some miles west of Norwich some years ago, but the original observer was not traced. As we have found with other areas, there may be more sightings that as yet remain unreported or have been dismissed. However, we would encourage a positive approach, raising awareness and wider investigation (Jeremy Gaskell, pers. comm.).

During the 2014 summer there was an influx of Scarce Tortoiseshell (*Nymphalis xanthomelas*), also known as the Yellow-legged Tortoiseshell, which initially caused quite a lot of discussion on various Internet forums as to their origin. It turned out that there had been a build-up on the continental coastline and these were genuine migrating insects (UK Butterflies, 2014). It was unfortunate that, at the same time, there had been a funeral at the Colney Woodland Burial Park just outside Norwich where it became known that some 'unusual' butterflies had been released (UK Butterflies, 2014).

However, only a few days later on the UK Butterflies forum (UK Butterflies, 2014), Andy Brazil, Norfolk butterfly recorder, posting under the pseudonym of HarassedDad, reported on Saturday 19th July:

"A web posting reports a YL in Sheringham yesterday. I also have a photo of a Purple Emperor taken in a garden in Sheringham yesterday. To put this context, the nearest emperors are in Suffolk; we haven't had a proven record since the early 60's. It's tempting to think that it's a migrant; However, I now have a partial list of what was released 10 days ago. Partial in that the supplier can only state that ..."

Further discussion then ensued:

Sun Jul 20, 2014 9:08 pm
Jack Harrison wrote:

"I am far from convinced that should automatically be considered suspicious. There is plenty of ancient woodland to the south of Sheringham (it could hardly be to the north). In my youth in the 1950s, Pearl-bordered and High Brown Fritillaries occurred in the Pretty Corner woods. With the well-known ability of the Purple Emperor to lurk undetected (Neil Hulme recently re-iterated this), surely PE could have easily remained un-discovered at a very low population level? PE is now seemingly doing much better in recent years so I would think it is possible that finally it has reached observational status in North Norfolk."

The response back from Andy Brazil was:

"They'd have to have remained undiscovered for a very long time. And bearing in mind that the NT holds training courses for entomologists there it would be remarkable if we'd missed them. It's not like it's not visited every day by the public. And yet the population has built up to a level where it turns up in nearby gardens and still no sign of them in the wood. That's pretty special pleading. If we were talking about private woodland with big keep out signs and their own security force I might believe it. But not in a public park. And not on the North Norfolk coast - which holds more naturalists per acre than anywhere else in the country.

Bearing in mind that they're only in Suffolk because someone put them there. Otherwise the nearest colony would be over 100 miles away. And the ability to lurk undetected is a fascinating hypothesis, but by definition it's impossible to prove. All we know is that there weren't any PE's seen somewhere and then there were. Either they were there all the time but invisible, or they just arrived. What we do know is that people try all the time to introduce them - there's probably no more common illicit introduction species. And this case we have an email from a butterfly supply company saying they might have sent purple emperor in a box shook out 30 miles away, and the sighting is in a bungalow just 300m from the sea at a time when we know there's migrants coming in."

It should be noted that the original poster was not aware of our recent records from Suffolk and our hearing of an historic record from the Norfolk/Suffolk border at Euston Park! Liz Goodyear, alerted to the discussion, posted her response ... to which the discussion subsequently ended!

"I have just been alerted to the post within this topic of a Purple Emperor being seen in Norfolk. I appreciate that there has been an unfortunate release of butterflies in the county.

Some points to answer - our first sightings were made by Andrew Middleton in central Hertfordshire in 1999 followed by more sites every year since ... going southwards, northwards and eastwards ... we have now got as far two woodland locations in Suffolk (one c20km from the Norfolk/Suffolk border). For those that might like to know more about this, our 2013 Suffolk report was published in the Suffolk Argus, the newsletter of the Suffolk Branch of BC a few weeks ago. Every now and then we do try to count the number of assembly areas we have found but we are getting close to losing count. These numbers have in recent years been added to by other enthusiasts, in particular Laurence Drummond. We rarely see one grounded as this is not our method of searching, we look for assembly areas. We rarely take photos ...

Please never underestimate the power of this species to remain undetected in woodland even when it is the most visited woodland in the county! An example being Northaw Great Wood in Hertfordshire where we found an assembly area in 2004 which continues to be our best site in the county and still occupied yesterday. The only previous report had been in the 1960s and thrown in the bin. This could be one of the most walked woods in the area, countless dog owners and subsequent muck, a car park, a toilet block, a warden's cottage and as far as I can remember only two reports of groundings since we found the assembly area, one this year by our branch chairman! The assembly area is just by the car park and entrance to the wood! A similar situation occurred in north Essex (well away from any releases) where again Purple Emperor were found in a well used wood frequented by many dogs (to the extent the paths were putrid). In 2012, Andrew found a new assembly area in north Enfield, only a matter of miles from his house, countless visitors, historic records up to a 100 years old in the area and searched by us on many occasions over the last 10 years before finding the exact spot!

The East of England doesn't have the numbers generated at Fermyn Woods or say in Sussex, the butterfly is very discrete and at very low population levels and we suspect always been present in all counties although we feel that there is a general increase in detectable numbers in recent years (following the Silver-washed trend). And the power of the internet, digital cameras and social media is immense and this is also helping fill in many gaps in between our own sightings - hence the report from Norfolk, another one from Suffolk and all the Yellow-legged Tortoiseshell reports - this wouldn't have happened in 1999 when Andrew has his first sighting. It was letters, an occasional phone call if you knew who to ring and a camera that used film!

We will be producing a report shortly for the 2014 season"

So, when searching the Internet to see whether we could find anything more about the Sheringham sighting, we discovered two further reports ten days apart from 2011 on the Bird Forum website discussing Norfolk butterfly sightings (Norfolk Bird Forum, 2011).

Wednesday 6th July 2011, 15:55

"STOP PRESS: PURPLE EMPEROR reported Felbrigg Hall Sunday. TG199396 (I'm not saying I believe it - but I'll pass it on in the hope that someone will get a photo.)"

Thursday 7th July 2011, 10:25

"Any info on the possible purple emperor at Felbrigg Hall on Sunday"

Thursday 7th July 2011, 17:48

"Sorry, that's all I have. The report was second-hand, the observer claimed apparently that he was familiar with the species. Nearest breeding site is in Suffolk, so it would be either a cardboard box or a migrant in north Norfolk."

Sunday 17th July 2011, 15:06

"I have received today an email from a family who were on holiday in Norfolk. At TF 895 453 (just east off Lady Anne's road, they saw a Purple Emperor. This was on Sunday 10th. Their description is convincing, they saw it landed on bramble, and they are familiar with both white admiral and purple hairstreak. So either someone emptied a cardboard box up in north east Norfolk, or they blew in with the silver-washed."

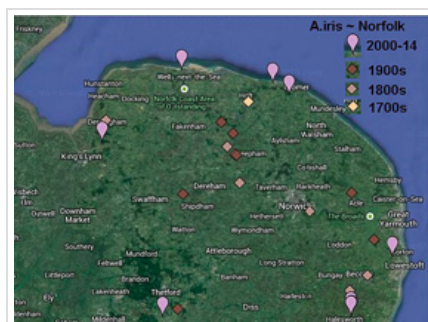


Figure 11 - Known *A. iris* records for Norfolk and north-east Suffolk

Photo © Geo-basis DE/BKG, Google Imagery, Terra Metrics

All in all a very negative response to potential sightings, although it is interesting that the three reports from Norfolk in 2011 and 2014 were close to the coast but ... in historic areas! The issue of migration has been discussed for some time with regard to the expansion of *A. paphia* by some Butterfly Conservation branch representatives. However, Liz Goodyear has maintained the HMBC website (Herts and Middlesex BC, 2014b) for nearly fifteen years and, during that period of time, has followed the *A. paphia* progress through the branch area from the odd sighting, often thought to be Dark Green Fritillary (*Argynnis aglaja*) or the Oak Eggar moth (*Lasiocampa quercus*) to numerous reports from many woodlands. We first saw *A. paphia* in private woodland on the Hertfordshire/Essex border in 2003, followed a few days later by a sighting at Tring Park on the western side of Hertfordshire. By 2006 they were becoming quite a common sight in the branch area and so the range expansion went on through Essex and Suffolk and now into Norfolk. There is no need to assume that it was migration from the continent, but a natural expanding spread through the east of England which we feel may also be mirrored by *A. iris*, so that it is now being seen more often but this has not been mirrored by the *L. camilla*.

Liz Goodyear then posted, on the UK Butterflies website forum, a request for information on migrating species and, in particular, *A. iris*. The response was initially very slow but some interesting points were brought up.

"Aware of much recent discussion regarding the dispersal of European species, which has been well documented on the forum I am looking for information ...

Is there any data available of species being recorded at Lightships or Lighthouses. I note some reference in the Aurelian Legacy but not specific to the species that I am most interested in. I am looking at long term data not just in recent years?

We have the standard migrating butterflies and moths, then we have the occasional migrating species and then we have the vagrants just like birds I suppose!

What species have been seen on the Continent's coastline that look like they are on a mission rather than just pottering around their local landscape.

And finally has anyone ever seen a Purple Emperor (*Apatura iris*) on the beach or shoreline either in the UK or abroad? You can see where I am going ..."

Postby Dave Brown: Sun Sep 14, 2014 3:19 pm

"I have been a Dungeness regular for nearly 30 years and have spent many hours on the beach sea watching. In all that time I have never seen, or heard of a Purple Emperor being seen, on the beach or just inland of it. Most years we see many Red Admirals, Small Tortoiseshells and Clouded Yellows coming in but never a PE. One year a Camberwell Beauty was seen and there have been sightings of Large Tortoiseshells and Swallowtails, but never a PE. Over the years many migrant Dragonfly species have been seen including Lesser Emperor, Vagrant Emperor, Red Veined Darter and Yellow Winged Darter amongst others. The Observatory Warden and support team are very hot on butterflies so I am confident that if PE had landed there it would have been recorded.

Maybe next year :)"

Postby HarassedDad: Tue Sep 23, 2014 5:33 am

"There's a bunch of lightship records in the New Naturalist volume "Insect Migration" (C. B. Williams 1958). He also lists all* the species for which he had records of migration into the UK, and there's no PE in there. But then he has no records of Silver-washed Frit - and yet two were seen flying in to Norfolk in 2010 at Sheringham. (Very close to where our PE turned up funny enough :-)

But then, the last 20 years have seen unprecedented movements of new dragonfly species into the UK - (Norfolk has added three new resident species of damselfly since 2000, with sightings of two more) so it's not unreasonable to expect similar unexpected migrations of butterflies at some point. The Yellow-legged is probably the first of many.

*Or at least he claims it's all but then refers in the text below to a species not on the list."

Postby Neil Hulme: Tue Sep 23, 2014 7:54 am

"In early August this year there was a good influx of butterflies on Jersey, including Silver-washed Fritillary, Map and a Purple Emperor. That's a minimum distance of c. 30 Km across water. Purple Emperor turns up on coastal Normandy with some regularity, and in atypical habitat, such as open grassland (T. Brereton pers. comm.). The invasion of Sweden by Purple Emperor in the early 1980s might have involved a flight across water. I'm sure they are doing this more often than we think; we probably only see the tip of the iceberg, or rather less than this, at more like 1%."

So the jury is out; could some of these individuals that have turned up close to the north Norfolk coast be migrants? Yes. Could they be released individuals? Yes. Or, as we have been proven correct to assume in other areas of suitable habitat, could they be genuine records indicating a low-density local population? Only time will tell ... and we are certainly not going to give up searching the Norfolk landscape!

6.2 Historic updates and additional information

6.2.1 Historic - general

One historic document to be found for Norfolk that had eluded us had been the entry in the first edition of the Norfolk and Norwich Naturalists' Society Vol I, Supplement Norfolk Lepidoptera, Barrett, C.G., 1873-1874. Presented to the members for 1873-1874 (Barrett, 1874). The copy seen at the Natural History Museum London was annotated.

"*Apatura Iris*, Linn. Foulsham, Dersingham, Foxley Wood; rare in this county. Mr. Athow tells me that it was found many years ago at Whitlingham."

Then on page 693 'Additional notes on Lepidoptera' already recorded in the Norfolk List it states: "Abundant at Foxley".

6.2.2 Holt area (TG03)

A general history of the county of Norfolk: A Norfolk Tour Volume 1 - 1829 (Chambers, 1829)

"*Apatura Iris*, the Purple Emperor near Holt"

1995 Hickling Broad, Norfolk 22nd July Local Meeting (Norman, 1995)

"Hickling Broad on 22 July could not have been more different. Linda Laxton led a party of 24 which nicely filled two boats for the trip to see *Naias flexilis*. This of course they duly did. One member provided entertainment by stripping off and diving in to see the plant, as one might well say, in situ. On an island hide, a 60-foot ladder could be climbed, and was by some, for a spectacular view of Norfolk to the coast (no mountains to get in the way - I personally would trade in the Lakeland Fells for this any day!). After lunch some of the group did go to the coast to see the salt marshes close up, with *Suaeda vera*, *Carex extensa* and lots of the other species to be expected in the habitat. They finished up at Holt where they had the pleasure of seeing the best display of *Goodyera* that there had been for many years, and a Purple Emperor flew by. (The Swallowtails had of course been seen in the morning.)"

6.2.3 Foxley Wood (NWT; TGO2)

"Found master tree - 4-5 seen, c.10 days or so mid July as per now. Difficult to see. About 100m in from wood edge, now gone. Otherwise on gibbet, mud and fox droppings. Found larvae by looking up into leaves May June. Hornby's comments in the report should have been for David Ruthven. Never common or abundant. Other person in report (Wild and Ashton, 1997) was his friend and had recently died, he knew where the original master tree was - it was tall with a leafy top and not much at the bottom, though David never saw it."

Notes from Andrew Middleton's conversation with David Ruthven talking about Foxley Wood and *A. iris* - 6 August 2011.

Foxley Wood (NWT; TG02)

Extract from Wild, C., and Ashton, P., 1997, The History of the Purple Emperor Butterfly (*APATURA IRIS* L.) in Norfolk - with special reference to Foxley Wood, *Trans Norfolk Norwich Nat. Soc.* 31: 41-49. (Wild and Ashton, 1997).

"In 1980 a specimen was reported by the gamekeeper to J. Barkham but its identification was in doubt, possibly being confused with a large individual of the White Admiral (Ladoga Camilla) (Barkham, unpubl.)."

We have recently contacted Dr John Barkham with regard to this report:

"I remember the 1980 incident quite well ... I was continuing to carry out some plant ecological research there with various students ... He (the gamekeeper) was an observant guy and knew of my natural history interests and so, soon after he observed what he knew to be a purple emperor as he was driving his tractor along one of the central rides in the wood, he told me about it. I hoped very much that he would report further sightings and, of course, I paid a few short visits to the most likely areas for it which were then, in my view, along the NW and N sides of the wood. I found nothing and nor did he. It remains perfectly possible (it was my view) that it was a case of mistaken identity. The gamekeeper saw it in flight. I seem to remember him saying he had seen a flash of purple. No, I'm afraid I have no date and made no written record.

However, I remember there had long been rumours of the butterfly in Foxley. I seem to remember Alec Bull, who lived locally, saying it had been there 'in the past'. I think the site, even in the 60s-80s when it was so badly devastated over large parts, still retained the mix of habitat that would suit the PE! No, I never heard of PE being reported elsewhere in the county."

John Barkham - October 2014

6.2.4 Dereham area (TG02/TG12)

"Last night at the bird club meeting someone told me he had once seen a Purple Emperor in a wood near Dereham, 15 miles or so west of Norwich."

Jeremy Gaskell - 2008

We have notes of sightings from each of the last five decades in Norfolk.

7. Cambridgeshire VC29 incorporating Huntingdonshire VC31

7.1 Introduction and background information

Our renewed interest in Cambridgeshire, including the historic county of Huntingdonshire, started with our locating an assembly area on the south-eastern side of Cambridgeshire in 2013 (see section 5 - Suffolk), in an area where there was no record of historic sightings. However, our interest was also fuelled by email correspondence during the winter with Nick Greatorex-Davies, a member of the Cambs and Essex BC, who is also involved with the Huntingdon Moth and Butterfly Group (HMBG). He was asking our opinion on some sightings in Huntingdonshire in 2013.

As has been well documented, 2013 was an exceptional year for *A. iris* sightings in parts of the country, especially in areas where many believed that the species was no longer present. One area, in particular, was Huntingdonshire with several sightings in some of the 'historic' areas of woodland. These historic areas included Monks Wood (NE; TL18 and previously home to the Centre for Ecology and Hydrology (CEH) where Nick has worked) and Brampton Wood (Bedfordshire, Cambridgeshire, Northamptonshire Wildlife Trust (BCNWT); TL17) - woods where the collectors were prolific and the records well documented! Nick also noted in his paper (Greatorex-Davies, 2014) the most recent record (in 1983) from Monks Wood which we were not aware of.

"... Since then there have only been very occasional records in Monks Wood, the most recent being one in 1963 (Dr Tanton, in Chance, 1995) and one flying from Bevill's Wood to Monks Wood in 1983 (Colin Drage, in Chance, 1995)."

Nick Greatorex-Davies - 2014

In Nick's paper he also brought to our attention some interesting *A. iris* sightings at Woodwalton Fen NNR (BCNWT, TL28) which is now part of the Great Fen Project (Great Fen, 2014) and where *A. iris* had first been seen in 2011 (Greatorex-Davies, 2014).

Nick was preparing a report on the 2013 *A. iris* sightings for the HMBG and initially found he was having difficulty explaining the recent surge in sightings, or believing that colonies might exist, and considered that they might be vagrants from known sites in Bedfordshire or Northamptonshire. We drew on our experience in Hertfordshire and Essex, explaining that this was a landscape scale butterfly and that in our view it may well have been present all along at very low densities. As a result of our discussion, Nick was able to redraft his article, considering different perspectives to the original view of dispersing insects.

It was not surprising that Nick had difficulty explaining the reports when several of the recent sightings have been referred to as basically unexplained, such as the sighting at Hayley Wood (BCNWT; TL25) in south-west Cambridgeshire in 2012 "An unusual sighting for this location - we would welcome any opinions on where this may have come from" (Cambs and Essex BC, 2012) and in 2011 at Bar Hill, again south of Cambridge "To my complete surprise I watched a Purple Emperor today ... Editor adds: This is well outside the normal range for this species so its provenance is questionable" (Cambs and Essex BC, 2011). In our view it was quite clear that they were already present in the landscape!

Several years ago we had researched all the known historic records in the Eastern Region and had been helped by Charles Baker and Keith Balmer (Bedfordshire), Val Perrin (Cambridgeshire) and Barry Dickerson (specifically Huntingdonshire), so we had a full understanding of

the historic landscape and level of records (Goodyear and Middleton, 2006). As a result of our renewed interest in the Huntingdonshire woodland landscape, we made three visits in the spring of 2014 to assess the woods for *A. iris* suitability. Included in these visits were the publically accessible woods of Aversley Wood (WT; TL18), Brampton Wood and Monks Wood National Nature Reserve (NNR). We were not overly impressed with the *salix* density and were also disappointed that, despite the recent *A. iris* sightings, in some of the woods, where *salix* numbers appeared low, large rideside *salix* were still being felled in preference to other trees. However, there were some potential assembly areas and it was our intention to visit during the summer flight period. On our third visit we also made a lifetime first visit to Fermyn Woods in Northamptonshire. If anyone wonders why this area of woodland is so good for *A. iris*, we are of the opinion that the answer is quite simple. We saw one of the highest densities of *salix* over such a large area of woodland that we have ever encountered on all our site surveys.

We also visited Paxton Pits (TL16), which is managed by Huntingdon District Council (Paxton Pits, 2014) where a report had been received in 2013 (Paxton Ranger, 2013), and Woodwalton Fen. Both sites were *salix*-rich wetland sites, but Woodwalton Fen was also quite fascinating. The landscape surrounding the site is drained fen, with numerous drainage channels, very flat, with much now being arable land and almost all of which is below sea level, surrounded to the south and west by a relatively well-wooded and slightly hilly landscape. Woodwalton Fen is a remnant fen that was purchased by Charles Rothschild in 1910 and is also at sea level. In 1910 Charles Rothschild built a bungalow on stilts in the middle of the fen, which is encircled by some mature *quercus* which essentially creates the perfect point for an assembly area. The (Great Fen, 2014) details its history and mentions that the bungalow was built on the site of an old farmstead, which could indicate that the ground was more stable and/or slightly higher at this point. Certainly, in many years gone by, when much of the fenland was underwater, the wooden causeway excavated at Flag Fen near Peterborough linked inhabited 'islands'. The Great Fen website also has some discussion following the 2013 sightings that says "the site couldn't be classed as being colonised by *A. iris* for a further four years" (Great Fen, 2013a). We are unsure upon what field experience this comment is based. However, our view is that a strong colony exists here, and it is in an historic landscape for the species.

Throughout the 2014 flight period, as observer interest grew, numerous reports came from Woodwalton Fen (Cambs and Essex BC, 2014), especially of males around the *quercus* at Rothchild's bungalow, and near the end of the flight period on 28th July 2014 we visited the site, walking in over the Great Raveley Drain. It was not yet 12:30 and we had hardly sat down to watch the *quercus*, when we looked up to see a male *A. iris* fly around the trees. Over a period of 1 ½ hours we observed almost continuous activity of three different males and near the end of our watch a very tired individual also flew past. A total of four butterflies was truly amazing and was a great end to our season's surveying. We were delighted to meet NE Reserve Warden Rebekah O'Driscoll, who told us all about the previous years' sightings, the discussion regarding colonisation and the numerous sightings this year. We have kept in touch and she informed us that the last sighting was made on the 6th August 2014. It was very interesting to note that this site, due to its water related cooler climate, appears to have a later flight period to that experienced by us in Hertfordshire, and other areas we have found in the Eastern Region.

The assembly area at Woodwalton Fen was a delight to watch, unlike many closed canopy woodlands. We could see *A. iris* flying in from all directions without the presence of adjacent trees blocking the view. No doubt this has helped the less experienced recorders as the counts for the site have escalated from one in 2011, none in 2012, twelve in 2013 to over thirty in 2014 (Barry Dickerson, pers. comm.)! Looking at the grid references for the other reports in 2013 and 2014, it appears that the majority of the new sites have been found by lucky individuals encountering a grounded male on tracks adjacent to the actual woodland, as opposed to our method of searching for assembly areas. Of course, more people are now specifically visiting the site so generating higher counts. This is the way of things and this has to be taken into account when considering any such situation.

A. iris continued to be reported on the (Cambs and Essex BC, 2014) in woodland west of Peterborough. Reports have now been received from Bedford Purlieu NNR (FC; TL09), Castor Hanglands NNR (NE; TF10) and, in 2014, Southey Woods (FC; TF10) for the first time. This is an area which we haven't visited, but has historic records. There were further reports from Brampton Wood this year (Cambs and Essex BC, 2014), and we are also aware of two further new sites in the Cambridgeshire / Huntingdonshire area which have not been published on the Cambs and Essex BC website (Barry Dickerson, pers. comm.). These two new locations continue to link up known sites within the landscape, including those already known to us in Hertfordshire and Bedfordshire.

Of additional note, following on from our success in 2013 and 2014 at Balsham, the Cambs and Essex BC website (Cambs and Essex BC, 2014) reports several sightings of up to four individual *A. iris* from Ditton Park Wood (FC, TL65) near Newmarket. *A. iris* was seen and photographed on a sap run or feeding tree, to which other butterflies and insects were also attracted. The seemingly well-established colony is nearly 10km from Balsham in a generally new area that is void of historic records to our knowledge. (We have included Balsham Wood with our Suffolk section as all visits there were made in tandem with our Suffolk survey work, and the wood lies just within the south Suffolk and north Essex claylands landscape).

7.2 Cambridgeshire including Huntingdonshire (VC31) - historic update and additional information

7.2.1 Doddington Wood (TL49)

In the Appendix II in our 2005 report (Goodyear and Middleton, 2006) we wrote that we were unable to trace Doddington Wood and assumed it was a mistake?

"Appendix II - Cambridgeshire
Victoria History of the County of Cambridgeshire and the Isle of Ely [1938]
Lepidoptera by J. C. F. Fryer (Fryer, 1938)
Apatura iris, Nr. Cambridge (F., Intell., no 23, 1856, and A.H.W., E.M.M., xx, 131, 1883). Doddington Wood (F.L.).

We have been unable to trace Doddington Wood. The only village with that name in Cambridgeshire is in the fens which, would not

appear to be an appropriate area for *A. iris*. Searches of historical maps and information requests have drawn a blank and has lead us and others to believe this may in fact be an error. The reference "F.L." needs further investigation."

We have since traced an area of historic woodland just north of Doddington - the shape of the wood is still visible on the Ordnance Survey maps as irregular amongst the relatively straight drainage dykes at TL405914 and names such as Coneywood Farm and Wood Street should have been obvious clues when doing our original research. The wood and village are just a few metres above sea level, which is also significant. The wood is shown on old maps until the 1953 Ordnance Survey series (Old Maps, 1953).



Figure 12 - Map of Doddington showing the location of the wood outlined in red

Photo © Geo-basis DE/BKG, Google Imagery, Terra Metrics

7.2.2 Cambridgeshire - a general overview

The Butterflies of Cambridgeshire 2006 Butterfly Conservation Cambridgeshire and Essex Branch
Field, R., et al., 2006 p82 (Field et al., 2006)
Butterflies Now Considered Extinct in Cambridgeshire
Purple Emperor *Apatura iris*

"This spectacular butterfly of oak woodland is now confined largely to the more southern counties of England. There are old records for Cambridgeshire and Huntingdonshire. It was recorded several times near Cambridge (6,28,30,46). There is also a record from before 1878 at Doddington Wood (VCHC), although there is no wood in this fenland vicinity today. The Purple Emperor was recorded from Monks Wood, Bevill's Wood and Brampton Wood before 1860 (9). Fifty were seen in Monks Wood in a single day in 1897, a truly wonderful experience by today's standards anywhere in England! Major Stuart Maples (21) writes proudly of his first discovery of this butterfly in Monks Wood some time prior to 1922. "in the south-west corner of the Wood, by the roadside... I behold his 'Imperial Highness' ... and he, together with several others taken in Monks Wood now grace my cabinet". Alas, such was the fate of many butterflies in those days. The last record from Monks Wood was 1964 but there are earlier records for Purple Emperor from Bedford Purlieu before 1960 (49) and Castor in 1905 (Peterborough Museum)."

Numbers relate to references in Atlas:

- 6. Jenyns RL. Entomologia Canabrigiensis Part 1 Haustellata. Lepidoptera (Catalogue of Cambridgeshire Insects in the cabinet of the Rev RL Jenyns) presented to Cambridge University Museum, April (1868)
- 9. Blackie JEH. Lepidoptera of Huntingdonshire. Annual Reports of Hunts Fauna and Flora Society (1952-55)
- 21. Maples Major S. Wonders of Monks Wood. The Wood and its Romantic Story. Some Notable Butterflies and Moths Repr. Peterborough Advertiser, (1922)
- 28. Farren W. A list of Lepidoptera of Wicken and Neighbouring Fens, in the Natural History of Wicken Fen ed. Gardiner JS. Bowes and Bowes 1926; III:258-66
- 30. Newman E. The Natural History of British Butterflies and Moth, (1871)
- 46. Waters. Entomol (1883) 17:16
- 49. Peterkin G and Welch RC. Bedford Purlieu, Ecology and Management, ITE Symposium (1975)

We have not been able to find all the original entries for the references listed above, however those we have found are listed below.

7.2.3 City of Cambridge area

Perrin, V. (1994 - unpublished). Historical background notes for Purple Emperor (*Apatura iris*) (Perrin, 1994)

"There are old records for Cambridgeshire and, as the butterfly is so distinctive, it would seem unlikely that it could have been mistaken for any other species. Farren (in 1856) records it from "near Cambridge", and in 1868 a specimen was said to have been seen within two miles of the city (Ent (1883); 17:16; CNHS). Also in that year, a specimen was apparently seen at Stapleford, although not taken (Layard, in Jenyns). Thomas Brown (in Newman, 1871) also confirms it was found in woods near Cambridge."

The Reverend Leonard Jenyns turned down an offer of a place on the Beagle in 1830! (Vaughan, 2002)

The Entomologist, 1883 Vol. VII page 16 (Waters, 1883) [Although all references relate to the edition being 1883, Volume VII, as does the online entry, the front page of the online copy has been annotated to read 1884, Volume VIII]

"LEPIDOPTERA AT CAMBRIDGE - My entomological researches during the past year have been confined to the environs of the town of Cambridge

... I have noticed among the Diurni, within a radius of two miles from the centre of the town,

... one specimen of Apatura iris (in 1808, but none since).

A H WATERS, Willoughby House, Mill Road, Cambridge."

Appendix I - An Illustrated Natural History of British Butterflies [1874], page 71-77. Purple Emperor by E. Newman (Newman, 1874)

"Cambridgeshire. Woods near Cambridge - Thomas Brown"

7.2.4 Huntingdonshire (VC29) - a general overview

We are most grateful to Nick Greatorex-Davies for bringing the fascinating report below to our attention. Some records refer to Bedfordshire and Northamptonshire sites but have been included so as not to spoil the information. The upper case initials between the year and the name of the author (shown below) are journal references - we do not have this information.

Chance, J. (1995 - unpublished). A history of the butterflies of Huntingdonshire District. 137pp. (Chance, 1995)

"Acknowledgements

My interest in butterflies was first awakened about the age of ten by, my then next door neighbour, Henry Atfield Leeds (1873 - 1958), when he gave me a few Small Tortoiseshell larvae to rear on stinging nettle, within a muslin covered shoe box. The memory of that first encounter with a butterfly's wondrous life cycle was etched in my mind but lay largely dormant for almost forty years, until it was rekindled in 1988 by Mr. Colin Drage of Abbots Ripton, who has since become one of my closest friends and has unselfishly shared his practical entomological knowledge and experiences with me. I express my gratitude to them both for their inspiration and enthusiasm which has significantly assisted my pleasure and understanding of the subject.

I am also indebted to all those people who have provided me with details of personal accounts and records, and to organisations such as English Nature, Oundle School, The Entomologist's Record and The Royal Entomological Society which have allowed me access to their libraries or have supplied photocopies, of relevant published material. My personal observations and interests have been considerably assisted by the acute vision of my wife Jean, and by my English Springer spaniel "Brandy" whose regular need for exercise has been one of the fundamental reasons for most of my own field trips. For their constant encouragement, support and companionship, I dedicate this work to them. John Chance, June 1995

PURPLE EMPEROR (Apatura iris)

1852: ALOBOITNOP / BREE

I am not acquainted with any locality which affords so many of our rare and less common butterflies, as this somewhat remote corner (Polebrook) of Northants. Barnwell and Ashton Wolds are particular favourite spots.

Early in the morning, and on damp, gloomy days, I have several times seen to the greatest advantage, as I conceive, the most splendid of all our butterflies at Barnwell and Ashton Wolds, sailing along the ridings, and settling upon the ruts and other moist and muddy spots, often assailed by the impudent attack of (the Meadow Brown and the Marbled White), which appear to be the foremost in attacking him when he thus condescends to leave for a while his lofty oak to visit the regions inhabited by his less honourable kindred. The partiality which this insect exhibits for individual sprigs of particular trees has often remarked upon by entomologists, and is certainly confirmed by Emperors of this neighbourhood. And it should almost seem as if this partiality were, if I may use the expression, hereditary; for upon a certain sprig of a small ash tree, by the side of one of the ridings in Barnwell Wold, I have each year since 1847 instances, upon the capture of one, the identical sprig has in the course of a few days, if not within a few hours, been invariably occupied by another Emperor. Bree records the butterfly as being not uncommon at Barnwell and Ashton Wolds during July and August.

1857: AMOBBAM / STAINTON

Woods in the South, on the tops of oaks. Monks Wood, Hunts recorded as a specific locality.

1860: BB / COLEMAN

The butterfly appears in July, and is found in oak woods in many localities of the South. The following are a few of these; Barnwell Wold, Northants, Monks Wood, Huntingdonshire.

1870: BB / MORRIS

The 19th of July, 1852, must ever be the most memorable one the events of which are recorded in my entomological diary, for on that day did I first see the Emperor on his throne - the monarch of the forest clothed in his imperial purple,

'Mille tahens varios advero sole colores'

"The velvet nap which on his wings doth lie, The silken downe with which his back is dight, His glorious colour, and his glistering eiees " Spenser,

One ! two !! three !!! "Allied Sovereigns!" Thanks to the obliging hospitality of the Rev. William Bree, the curate of Polebrook, to whom I had no introduction but that which the freemasonry of Entomology supplies to its worthy brotherhood, I had the happiness of beholding His Majesty, or to speak more correctly, Their Majesties, though, as is only proper, at a most respectful distance; they at the " top of the tree, " and I on the humble ground. The next day, in the same wood, at Barnwell Wold, near Oundle, Northamptonshire, during my absence in successful search of the Large Blue, of which more anon, Mr Bree most cleverly captured one, by acting on the principle - an invaluable one, as I have always found it, long before its enunciation by the late Sir Robert Peel, to the students of the University of Glasgow, at his installation as rector, in his best speech by the way, if I do not make my sentence too long, that he ever made - namely, whatever you want to do that is within the bounds of possibility, determine that it shall be done, and you will be sure to succeed! That specimen, a male as a practical illustration of the lesson, now graces my cabinet, together with the first female that his captor had ever taken, both obligingly presented by him to me. Since then, I have just heard from him that he took another the day after I left him, in one of the ridings of the wood, in his hat. I hope that Her Most Gracious Majesty has no more profoundly loyal subject than myself, and I may therefore relate that, while plotting and planning an "infernal machine" against his Imperial Majesty's liberty and life the following summer, in the shape of a fifty-foot net, and without any reference therefore to what is going on in France, or any allusion to the career of Louis Napoleon, my toast that evening after dinner was, (with as much sincerity as in the minds of the French) 'Vive L'Empereur ' Since then, in 1854, Mr. Bree captured nine in one day in three hours, three of which he has given to me. The following are given as localities for this noble fly:- Lilford, Barnwell, and Ashton Wolds and the neighbourhood of Polebrook, Northamptonshire. St. Neots in Huntingdonshire. This splendid insect is to be seen, if seen at all, the first or second week in July, perched on the outermost spray of some commanding oak or other tree - an elm - or an ash - the highest that the neighbouring locality affords him. There he sits, generally with his attention directed outwards, as an Island King's should be, conscious that at home he is secure. If a rival approaches, a fight is of course the consequence - 'Pares cum paribus' ; and 'O'tis a goodly sight to see !'

1871: ANHOBB / NEWMAN

At page 5923 of the " Zoologist " for 1858 the Rev. William Bree describes such a variety in these words :- on the 13th of July 1857, I had the good fortune to capture, in Ashton Wold, near Oundle, Northamptonshire, a very singular and interesting variety of Purple Emperor. There is an entire absence of the beautiful white band which in ordinary specimens, crossing the middle of the forewing : of five white spots extending in a curve from the costa to the anal angle, one spot only, namely the fourth, is visible; the two spots near the tip are smaller than usual, the second of the two being little more than a speck; the costal margin and the tip are strongly powdered with fulvous, and the usual fulvous ring of hind wing being broken on its lower side extends in a strong fulvous marking over the anal angle : the rich purple shade is spread over the wings as in the ordinary specimens, blended, however, in parts with fulvous. The underside is equally remarkable, though difficult to describe; the colouring and markings are much confused. Huntingdonshire: Monks Wood and Brampton Wood, not uncommon but very difficult to capture - J. H. White; Woods near Peterborough - F. Bond'

Northamptonshire : " Early in the morning, and on damp, gloomy days, I have several times seen to the great advantage, as I conceive, the most splendid of all our butterflies at Barnwell and Ashton Wolds, sailing along the ridings, and settling upon the ruts and other moist and muddy spots, often assailed by the impudent attack of (the Meadow Brown and the Marbled White), which appear to be the foremost in attacking him when he thus condescends to leave for a while his lofty oak to visit the regions inhabited by his less honourable kindred.' The partiality which this insect exhibits for individual sprigs of particular trees has often remarked upon by entomologists, and is certainly confirmed by Emperors of this neighbourhood. And it should almost seem as if this partiality were, if I may use the expression, hereditary; here upon a certain sprig of a small ash tree' by the side of one of the ridings in Barnwell Wold, I have each year since 1847 succeeded in capturing the Purple Emperor; and in all instances, upon the capture of one, the identical sprig has in the course of a few days, if not within a few hours, been invariably occupied by another Emperor. "- William Bree'

The Lynches (near Peterborough) F. Bond

1875 - 1929: RCHIBM

Includes a specimen bred from larva collected in Monks Wood on 13th May 1876 by W' Jagger'

1876: TE / AIH / CONQUEST

I spent a few days in search of the Purple Emperor in the middle of July last, and in woods near Huntingdon took the considerable number of twenty-seven specimens - twenty-one males and six females. My two best days were the 18th and 19th of July, which produced eighteen specimens. I tried carrion, in the shape of several dead hedgehogs, which I distributed about the woods, but I only captured one in this way - a fine male. All the rest I took (mostly on the wing) with my net, fixed on an eighteen-foot ash pole. I write this thinking it may interest some of your readers to know that the Purple Emperor is still to be taken in some plenty in our Midland Counties.

Harold Conquest, West Lodge, St. Ann's Road, Stamford Hill, N. London. September 5th 1876.

1878: TFPAP / MILLER & SKERTCHLY

Recorded at Monks Wood and Brampton Wood'

1887: TBOGB / WESTWOOD

Monks Wood, Cambs ... has been given as one of its localities ... Mr F. Bond finds it in some seasons very common in a wood near Norman's Cross.

1889: HOSI / NORRIS

Recorded by Norris in his list of captures in Monks Wood.

1894: TE / ADIMW / BLAKE

Whilst quietly lunching in the shade (on 6th July 1593) I espied a female Purple Emperor flying grandly round an adjacent oak tree; the bushes grew high and thick here, therefore I failed to get within reach of her. By this time my boxes were closely packed, so I bade Monks Wood farewell.

1911: CCCH / NOBLE

The Purple Emperor a fine species inhabits Monks Wood.

1922: WOMW / MAPLES

Recorded by Maples as a butterfly of north-east Huntingdonshire. He notes the butterfly is out from July to August and may often be found on mud at pond-sides at 9.30 am to 10 am. The larvae feed at night on broad leaved willow. It was in Monks Wood that I first beheld the Monarch of the Forest. In the south-west corner of the wood, by the roadside, at one time grew some tall beech trees, near to was a jungle of willow, upon which the caterpillar of this magnificent fly feeds, and it was here on a very hot day in July that I beheld his "Imperial Highness" sitting with his wings extended on the mud of an extremely odorous pond; a habit this insect has in the early morning. A dexterous sweep of the net and I had him, and he, together with several others taken in Monks Wood now grace my cabinet. I spent the rest of the morning searching for more but found none. This insect still occurs sparingly every year, and is usually perched at the top of the tallest oak the wood affords him. The publication includes Plates showing two males taken in July 1920, and a female taken in July 1912.

1923 - 1932: LOMLPA / POOLES

Only one authentic record; namely one specimen taken in the larva state by Mr Charles Mellows in 1929. This larva was successfully reared, and produced a female imago.

1926: VCH

The Purple Emperor is still to be seen occasionally in the woods but is much scarcer than it was formerly. Mr Farren tells me that he saw more than 50 one day in June, 1887, in Monks Wood. The Purple Emperor, as already mentioned, is still to be taken there; and, though the recent felling of the wood has done much damage to the fauna, it is still a very good collecting ground for the lepidopterist. Recorded at Brampton Wood by Rev. G. H. Raynor; at Monks Wood by G. A. R., W. Farren, Major S. Maples and J. Peed, at Beville's Wood by R. James.

1938: TE / NAOOBITEC / SMITH

At Monks Wood I had the pleasure (in company with my father and a friend) of seeing one of the fine Purple Emperors in flight round some willow bushes.

1942: OSNHSAR

The Purple Emperor was found at Southwick Wood, near Oundle, and at Glaphorn Cow Pasture several members had a tantalising sight of a Purple Emperor flying high among the trees.

1943: OSNHSAR

Cherry Lap Wood, near Oundle, seemed to afford the best hunting ground, where the interesting finds included the Purple Emperor.

1944: SLES / LEEDS

The most imposing part at that time was along the south face, where on either side of "Old Saul" were majestic oaks interspersed with hundreds of straight younger oaks towering above them. Here in July many Purple Emperors settled on the trees or gambolled around each other, ascending high into the air. Sometimes one male would descend swiftly and settle on the sun - heated tiles of the hut, or chase a Silver Washed Fritillary back and forth along the then wide grassy front riding. Only rarely would one settle on the ground. The lumbermen destroyed these oaks and the Purple Emperor has almost disappeared since.

1945: ER / BCIVVHAD1944 / LEEDS

In the latter part of July in 1944 the keeper in Monks Wood saw what he described as "a large dark blue butterfly with some white on it" probably this was a male Purple Emperor.

1948: LL 16.8.48.

Prior to 1914 - 1918 war several could be seen along the south face of Monks Wood, and oddly in other parts and woods. Occasionally one is reported as seen, but not by myself since the high oaks were felled.

1949: TE / TBOTMWD / BLACKIE

In recent years there have been some sad changes. During the first world war the larger oaks were felled and the great reduction of the Purple Emperor was perhaps attributable to this and certainly happened about the same time. The Purple Emperor was once common, and is now all but extinct. Mr Leeds has not seen it since 1914, but Dr. Newton has seen one in recent years and I thought I saw two in 1948.

1949: OSNHSAR

Mr A F. Moody of Lilford saw a perfect female Purple Emperor in the flower border of Lilford Hall

1951: DRAGE

Henry Leeds showed me a female Purple Emperor taken that year (1951) in Monks Wood. The specimen was set underside for Mr Neverson's (Owner of Monks Wood before Nature Conservancy Council) collection.

1953: HFFAR

Recorded for Monks Wood, Beville's Wood and Brampton Wood before 1860 by J. H. White. Mr W. Farren saw 50 in Monks Wood in a single day in 1887 (VCH) and it persisted there until 1914. The felling of the great oaks and the reduction of Sallow perhaps combined to destroy it, and Mr Leeds has not seen it since that year. Dr. Newton has seen one quite recently. It has been lately recorded from Barnwell Wold and Ashton Wold just over the County border. (Oundle School N.H.S.), and it should be carefully looked for.

1964: HFFAR

One authentic record, the locality being secret.

1964: NAVOTPE / HESLOP, HYDE & STOCKLEY

Incidentally this year, 1860, probably marked the end of a golden age of British Butterflies and Moths. Many species or colonies of species never recovered from the disastrously cold and wet summer of that year. And the localisation of the Purple Emperor probably dates therefrom. In 1869 the great Edward Newman wrote of the Purple Emperor as having "achieved a great reputation among English entomologists for his lofty flight, and extreme difficulty of securing him with the hand-net." And goes on to quote the Reverend William Bree as saying, of two classic Northamptonshire localities : " Early in the morning, and on damp, gloomy days, I have several times seen to the greatest advantage, as I conceive, the most splendid of all our butterflies at Barnwell and Ashton Wolds, sailing along the ridings, and settling upon the ruts and other moist and muddy spots, often assailed by the impudent attack of (the Meadow Brown and the Marbled White), which appear to be the foremost in attacking him when he thus condescends to leave for a while his lofty oak to visit the regions inhabited by his less honourable kindred. The partiality which this insect exhibits for individual sprigs of particular trees has often remarked upon by entomologists, and is certainly confirmed by Emperors of this neighbourhood. And it should almost seem as if this partiality were, if I may use the expression, hereditary; for upon a certain sprig of a small ash tree, by the side of one of the ridings in Barnwell Wold, I have each year since 1847 succeeded in capturing the Purple Emperor; and in all instances, upon the capture of one, the identical sprig has in the course of a few days, if not within a few hours, been invariably occupied by another Emperor". It was the same William Bree that the Reverend F. O. Morris (the seventh edition of whose "History of British Butterflies " was published in the year he died, 1893) was speaking when he had written : "Thanks to the obliging hospitality of the Rev. William Bree, the curate of Polebrook, to whom I had no introduction but that which the freemasonry of Entomology supplies to its worthy brotherhood, I had the happiness of beholding His Majesty, or to speak more correctly, Their Majesties, though, as is only proper, at a most respectful distance; they at the " top of the tree, " and I on the humble ground. The next day, in the same wood, at Barnwell Wold, near Oundle, Northamptonshire, during my absence in successful search of the Large Blue, of which more anon, Mr Bree most cleverly captured one, by acting on the principle - an invaluable one, as I have always found it, long before its enunciation by the late Sir Robert Peel, to the students of the University of Glasgow, at his installation as rector, in his best speech by the way, if I do not make my sentence too long, that he ever made - namely, whatever you want to do that is within the bounds of possibility, determine that it shall be done, and you will be sure to succeed ! That specimen, a male, as a practical illustration of the lesson, now graces my cabinet, together with the first female that its captor had ever taken, both obligingly presented by him to me. Since then, I have just heard from him that he took another the day after I left him, in one of the ridings of the wood, in his hat. I hope that Her Most Gracious Majesty has no more profoundly loyal subject than myself, and I may therefore relate that, while plotting and planning an "infernal machine" against his Imperial Majesty's liberty and life the following summer, in the shape of a fifty-foot net, and without any reference therefore to what is going on in France, or any allusion to the career of Louis Napoleon, my toast that evening after dinner was, (with as much sincerity as in the minds of the French) ' Vive Purple Emperor (Purple Hairstreak Empereur ! 'Since then, in 1854, Mr. Bree captured nine in one day in three hours, three of which he has given to me.

1973: MWANRR / STEELE & WELCH

Recorded in Monks Wood in 1941 but rare since the 1920's.

1975: BPIHEAM / PETERKEN & WELCH

Recorded in Bedford Purlieus, but not seen since 1960.

1983: DRAGE

Whilst taking his midday lunch break on 15th July 1983, Mr. Drage saw a female, at close quarters, as it crossed from Beville's Wood into Monks Wood.

1989: HFFAR / CIBAM 1949-1989 / DICKERSON

Until 1950, the Purple Emperor could still be found in the county, but now with much of its suitable habitat lost it is unlikely to re-occur.

1977: HFFAR

Professor Babington records a male and female in his 1829 list for Monks Wood.

1993: GARNER

Has a Purple Emperor in his collection, caught by Dr. Tanton in Monks Wood in July 1963, which was given to him by Mr. J. Marriott, the former Warden of Monks Wood."

Nick Greatorex-Davies wrote in his recent paper: Is the Purple Emperor (*Apatura iris*) resident in Huntingdonshire (VC31)? (Greatorex-Davies, 2014)

"Until 2013 there have been very few records of this species in the VC for nearly 100 years. Historically the butterfly was known to occur in Monks Wood, Bevill's Wood and Brampton Wood. It used to be regularly recorded in Monks Wood up until about 1920. Since then there have only been very occasional records in Monks Wood, the most recent being one in 1963 (Dr Tanton, in Chance 1995) and one flying from Bevill's Wood to Monks Wood in 1983 (Colin Drage, in Chance 1995). Then in 2011 one was seen at Woodwalton Fen NNR. Interestingly it was also recorded just north of VC 31 at Castor Hanglands in 2013, which may be the first record there since 1923 (Chris Gardiner, pers. comm.)."

7.2.5 Bedford Purlieus NNR (FC; TL099)

BEDFORD PURLIEUS: its history, ecology and management Monks Wood Symposium No. 7, Edited by G.F. Peterkin and R.C. Welch, April 1975 (Peterkin and Welch, 1975)

"Prior to 1961, 39 species of butterfly had been recorded but of these ... *Apatura iris*, ... have not been noted since 1960."

July 2010

"A Purple Emperor on southern ride while watching White-letter Hairstreak on thistles. Plus White Admiral and Silver-washed Fritillary."

Roger Orbell. (Cambs and Essex BC, 2010)

"Just like to confirm the Purple Emperor sighting at Bedford Purlieus on the 9th. The guy who was there before me had taken pictures of what he thought was a White Admiral with purple bits, I asked to have a look saying it sounded like a P.E. Within 2 mins of confirming it as a P.E., one landed right in front of us on the track."

Paul Fisher (Cambs and Essex BC, 2010)

Found on the Flickr photo sharing website - a photo of *A. iris* from Joseph Lynn - photo taken on 9 July 2010 (Joseph Lynn, 2010)

"I found the Purple Emperor at Bedford Purlieus, just west of Wansford, near Peterborough. Grid reference - TL038988."

7.2.6 Castor Hanglands NNR (NE; TF10)

25 July 2013

"Possible/probable Purple Emperor seen gliding from the top of one oak to another either side of a wide track in a maturing clear fell area at the eastern side of the reserve (7.30pm). Frustratingly it did not land to confirm but white markings seen in the wings. Also noted very briefly on Monday where white markings were seen in the broad and deep hindwings as it glided above me. I did see a White Admiral in this area on Monday but am familiar with this species and it just did not match up to what I saw on either occasions."

Matthew Webb (Cambs and Essex BC, 2013)

5 July 2014

"Purple Emperor seen flying rapidly about the top of an oak before disappearing high into other oaks as soon as it appeared. 5 White Admirals and 6 Silver-washed Fritillaries were the other highlights all of which were seen along a couple of rides in the NE section of this site."

Matthew Webb (Cambs and Essex BC, 2014)

7.2.7 Bar Hill (TL36)

17 July 2011

"To my complete surprise I watched a Purple Emperor today at 17:40 for about 3 minutes feeding on the ground here, just a stone's throw from where I work at Domino!"

Ben Stephen (Cambs and Essex BC, 2011)

7.2.8 Hayley Wood (BCNWT; TL25)

25 July 2012

"Hayley Wood (An unusual sighting for this location - we would welcome any opinions on where this may have come from) Photo(s) supplied."

Anon news via Andy Coulson (Cambs and Essex BC, 2012)

7.2.9 Monks Wood NNR (NE; TL18)

Proceedings of a symposium on MONKS WOOD NATIONAL NATURE RESERVE. THE EXPERIENCE OF 40 YEARS 1953-93. (Massey and Welch, 1993)

"*THE LOSS OF BUTTERFLY SPECIES FROM MONKS WOOD 1953 TO 1972*

*Several other butterfly species have been recorded in the wood over the last 150 years, but apart from the purple emperor *Apatura iris*, their status as resident species is uncertain. The purple emperor, a butterfly of high forest, disappeared during fellings immediately following the First World War (Leeds, 1953)."*

7.3 Acknowledgements

Thanks are extended to Nick Greatorex-Davies and Barry Dickerson for keeping us up-to-date with the current status in Huntingdonshire.

8. Sallow - a weed no more?

*Simon Leatherdale, retired Forestry Commission Officer, must be recognised for bringing about such favourable management of woods for sallows and *A. iris* across a large part of the study area in the east of England, the results of which we have seen first-hand during our surveys. This is Simon's contribution to this report.*

Sallow (*Salix caprea*) has, until recently, been the bane of forester's lives. With the demise of traditional woodland management in the early Victorian period and the rise of continental plantation forestry practices, sallow was seen as a pernicious weed in most southern and eastern lowland woods. Wherever the soil was reasonably moist and fertile it would out-compete the planted crop.

Natural silvicultural systems are now, once again, more to the fore (at least amongst more enlightened land managers) so sallow may once again take its rightful place in our woodlands.

Far from being a useless weed - it has many virtues. As a firewood it is reasonable - its only shortfall is its propensity to emit sparks when lit. With the significant rise in the number of wood burning stoves being installed across the nation, this problem is largely eliminated.

From an ecological stand point the sallow has few peers. Very rapid growth when coppiced means that even in heavily deer browsed areas it is able to thrive. Three metres is achievable in its first year - though this rate tails off thereafter. The fact that it produces prodigious quantities of seed means that it will readily colonise areas with suitable conditions. The male trees produce large quantities of nectar and pollen, which is adored by bees and butterflies that have over-wintered. Well over a hundred species of moth are known to breed on sallow, including some real rarities.

Of all the species to use sallow, the Purple Emperor (*Apatura iris*) is perhaps the most iconic. Watching gravid females flitting through the bushes searching for egg laying sites is a wonderful sight.

In order to maximise the ecological potential of sallow on any one site it is important to encourage a diverse range of sallow specimens in age, form and aspect. Some should be coppiced in order to create a regular supply of new growth whilst also retaining some standards for as long as possible (some of the rarer invertebrates that use sallow have a strong preference for mature trees). Older trees are also excellent for producing decaying wood (so vital for fungi, invertebrates and slime moulds).

In existing semi-natural woodland there will be little need to plant sallow (or anything else) but it may be necessary in newly created woodland.

The main threat to this crucial species is ignorance of its value. So it is beholden to all of us to do our bit to encourage land managers see it in a more positive light - there is much work to be done in this respect especially amongst the more traditional types!

Simon Leatherdale
Harkstead, Suffolk
October 2014

Appendix A - Counties and 100km squares

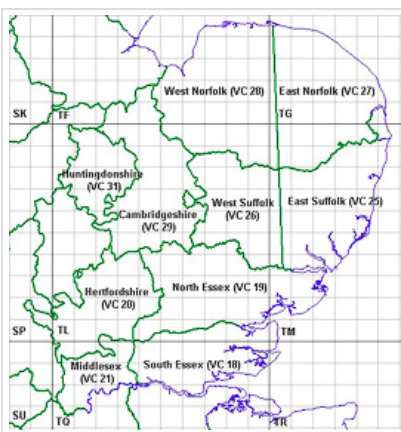


Figure 13 - Counties and 100km squares

Appendix B - Release sites

B.1 Markshall Estate, Essex (TL82)

Information obtained by asking NE a series of questions under the Freedom of Information Act suggests that further releases of *A. iris* and *A. paphia* were at least considered for 2014, despite both species being fairly widespread in the county.

B.2 Therberton, Suffolk (TM46)

Reports continue of numbers which appear somewhat higher than those found in the naturally occurring sites found elsewhere in the Eastern Region, despite reported reassurances that no releases were conducted in 2014. In recent years there have been a few reports of *A. iris* from sites relatively close to the Therberton Woods release site, for example Minsmere. We have not included these in the report because their origin is quite uncertain (Suffolk BC, 2014).

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