



**Lepidoptera Conservation Bulletin  
Number 13  
April 2012 – March 2013**

**Butterfly Conservation Report No. S13-18**

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**October 2013**



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Registered Office: Manor Yard, East Lulworth, Wareham, Dorset. BH20 5QP  
Charity registered in England and Wales (254937) and in Scotland (SCO39268)

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Davis, A.M. & Parsons, M.S. (eds.) (2013) *Lepidoptera Conservation Bulletin Number 12: April 2012 – March 2013*, Butterfly Conservation, Wareham. (Butterfly Conservation Report No. S13-18)

## 1 Introduction

As with previous editions, Lepidoptera Conservation Bulletin summarises the wide ranging work being undertaken to conserve Britain's moths and butterflies. However, a summary of this nature cannot be all-inclusive. Butterfly Conservation has conservation staff based in offices in England, Wales, Scotland and Northern Ireland, employs a series of Regional staff and runs several landscape based projects. This bulletin concentrates on the work of these staff and projects. Also, although primarily covered through other newsletters and reports, we include brief coverage of Butterfly Conservation's significant recording and monitoring schemes, the Moths Count project (incorporating the National Moth Recording Scheme, see [www.mothscount.org](http://www.mothscount.org)), the Butterflies for the New Millennium project and the UK Butterfly Monitoring Scheme. We also go beyond our shores and include an update on Butterfly Conservation Europe.

From 2000 onwards we have produced one Lepidoptera Conservation Bulletin a year, publishing this around April in advance of the main field season, with the exception of 2008 when we produced our *Conservation Review: 2000-2008*. The circulation of this Bulletin includes, amongst others, County Moth Recorders, Butterfly Conservation Branch Moth Officers, Branch Conservation Officers, representatives of partner organisations and the main offices of the governmental conservation agencies. In an effort to reduce costs, but also to increase circulation, we now distribute the Bulletin electronically and it will also be available as a download on the Butterfly Conservation website ([www.butterfly-conservation.org](http://www.butterfly-conservation.org)). This all helps to ensure a much wider and raised profile for moth and butterfly conservation. Please publicise this Bulletin in any newsletter or group you are involved with.

The year 2012/13 has again been one of significant challenges. It was another year of poor weather, perhaps even more so than the previous summer, with long periods of cool, wet conditions. In the previous financial year we suffered a substantial cut in government funding, resulting in a loss of two staff from the core conservation team based at Lulworth. The charity is also having to source match-funding for many grants, where funding rates have often been reduced to 50%.

As we mentioned last year, this situation is not sustainable in the longer term and considerable effort has been made to raise funds from other sources, for example through the Landfill tax scheme. During the current financial year we have been successful in gaining Landfill funding for work on the Large Blue *Phengaris arion* and Duke of Burgundy *Hamearis lucina* in the Cotswolds, Silver-studded Blue *Plebejus argus* and Lunar Yellow Underwing *Noctua orbona* on the Ipswich Heaths and the Betony Case-bearer *Coleophora wockeella*. Whilst we hope to retain some flexibility, this more project based approach is likely to impact on what we can achieve as staff resources are concentrated on fewer species. Also, whilst supported by a fund-raising team, much time is invested in raising funds and putting bids together, taking further resources away from our conservation efforts. Outside the core conservation team, Butterfly Conservation has maintained the conservation staffing levels in all areas in 2012/2013, including in our national offices in Scotland, Wales and Northern Ireland. For many moth projects countrywide we are grateful to the Patsy Wood Trust who have provided a grant this year, and for the next two years at least, which will go some way to providing at least part of the match funding requirement for many projects. In February 2013 we launched the *Moth Challenge Fund* (supported by the Patsy Wood Trust), a fund we hope to build on. Further details of this fund are covered within this Bulletin (see p.48). As ever, we are determined to continue to focus efforts on our threatened species and their habitats.

2012 has been another significant year for publications (see the Bibliography at the end of this Bulletin). The *Field Guide to the Micro-moths of Great Britain and Ireland* (by P. Sterling, M. Parsons & R. Lewington) has been well received. This book aims to make micro-moths more accessible and encourage their recording. Following the micro-moth theme, the *Smaller Moths of Surrey* (by R.M. Palmer, J. Porter and G.A. Collins) has been produced complementing the earlier *Larger Moths of Surrey*. J. Bebbington *et al* have published the *Macro-moth Distribution Atlas 2011 for Somerset (Vice-counties 5 & 6)*. These county lists are not only valuable snapshots in time, but will also become important historical documents. Further demonstrating the growing interest in moths, *Moths of Great Britain and Ireland* (by S. Clancy, M. Top-Jensen & M. Fibiger) give photographs of moths in both their

resting posture and with the wings spread (as set specimens so that hindwing characters are clear). At the European level *Moths of Europe. Volume 3. Zygaenids, Pyralids 1* (by P. Leraut) is the third volume of this handy sized series, whilst, after a gap of a few years, Volume 3 of *The Geometrid Moths of Europe* has been published. Not only is this an important reference series, this volume is notable as genetic information from DNA barcoding has been included for the majority of species – a glimpse of the future.

Finally, Butterfly Conservation was involved in two important launches. Firstly BC produced the *Landscape-scale conservation for butterflies and moths; lessons from the UK*, launching this at the House of Commons in late 2012. This publication covers a series of landscape scale projects from across the country, with a Foreword by Sir John Lawton. At the beginning of February 2013 BC, with Rothamsted Research, launched the second *State of Britain's Larger Moths*, this including analysis of the data from the Rothamsted Insect Survey, updating the 2006 report. Both received widespread publicity.

If you have any comments on this Bulletin we would of course be pleased to hear from you. As this Bulletin is now only distributed electronically, please ensure we have been provided with an up-to date email address. For further information on the work of Butterfly Conservation please see our website [www.butterfly-conservation.org](http://www.butterfly-conservation.org).

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## 2 Acknowledgments

Butterfly Conservation is grateful for the continued support of the Government Agencies and their nominated officers: Natural England (Jon Curson), Natural Resources Wales (formerly Countryside Council for Wales) (Adrian Fowles), Scottish Natural Heritage (Athayde Tonhasca) and Northern Ireland Environment Agency (Richard Weyl).

It would be impossible to thank all the individuals and organisations associated with the projects highlighted in this and previous Bulletins, but nevertheless, we would like to take this opportunity to express our gratitude to everyone who has made this work possible. Particular thanks are due to the County Moth Recorders, BMN Local Co-ordinators, Transect Co-ordinators, Butterfly Conservation Branch Moth and Conservation Officers, organisers of local moth groups, contractors and the many other individuals who have contributed time and expertise, for example by supporting the Moths Count project and assisting with individual conservation projects, and to the various partner organisations, site managers and land owners for their input and assistance to the various projects and initiatives. Without your help only a fraction of the projects covered by these Bulletins would have been possible. Finally we would like to thank all the contributors to this Bulletin, and those that have made the various projects possible, both for their contributions and for their continued efforts to conserve Britain's moths and butterflies.

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## 3 Conservation action for UK Biodiversity Action Plan Lepidoptera

Highlights of work carried out on selected UK Biodiversity Action Plan (BAP) species are provided below. Species protected under Schedule 5 of the Wildlife & Countryside Act are also covered within this section. Much of the work reported in this section was undertaken as part of *The Action for Butterflies & Moths Projects*, however, a large number of UK BAP species are also targeted by our landscape scale project work (reported within the regional sections). The terms Section 41, Section 42 and the Scottish Biodiversity List are becoming more frequently used. The Natural Environment and Rural Communities (NERC) Act came into force in 2006 and requires the publishing of a list of

habitats and species which are of principal importance for the conservation of biodiversity in England and Wales, these are the Section 41 and Section 42 lists respectively. Both lists incorporate UK BAP species. The Scottish Biodiversity List, which again includes UK BAP species, is produced by the Scottish Government and is a list of those habitats and species of prime importance to the conservation of Scotland's biodiversity.

Butterfly Conservation's (BC) work is funded by a wide range of funding partners, including Natural England (NE), Natural Resources Wales (NRW), Scottish Natural Heritage (SNH), Northern Ireland Environment Agency, the Heritage Lottery Fund, Countdown 2010, SITA Trust, WREN, Biffa Award, the Tubney Charitable Trust, Esmée Fairbairn Foundation, Patsy Wood Trust, Forestry Commission England, Forestry Commission Wales and Forestry Commission Scotland and individual donors.

Appendix A gives a full list of Lepidoptera listed under the UK BAP (excluding 'Research only' species).

### **3.1 Update on UK BAP moths – a summary for the year 2012**

Summaries by Mark Parsons, Tony Davis, John Hooson, Graham Jones and Tom Prescott.

Highlights of work carried out on selected UK BAP Priority moths are provided below. Further work on UK BAP moths is also reported in section 4. As will be seen from the accounts below, the weather clearly played its part in 2012, impacting on survey and monitoring work on a range of species.

Factsheets for many of the species covered below are available as downloads from the Butterfly Conservation (BC) website ([www.butterfly-conservation.org](http://www.butterfly-conservation.org)).

#### ***Agonopterix atomella***

Searches have been undertaken for the larvae of this Dyer's Greenweed *Genista tinctoria* feeding species at several sites this year, with the species found over four fields on a known Dorset site (with the potential for it to be found in a further two fields). In addition, larvae were discovered on a site in north Dorset, this farmland site supporting several other UK BAP moths and butterflies. There are other sites in the area that support the foodplant and searches of these are planned in 2013. A search was also made of a Wiltshire site, following the recording of an adult in 2011. A few larvae were found on a restricted part of this downland site, an SSSI.

#### **Argent & Sable *Rheumaptera hastata***

In early July, Shapwick Heath NNR, Somerset, was visited with the intention of trialling a monitoring technique for larval counts. The moth occurs over a reasonably wide area on the reserve in various fields, these providing suitable compartments. Four fields were selected and timed larval searches were undertaken, two fields being surveyed for 45 minutes each and two smaller fields searched for 30 minutes each. In total 47 larvae were found. It is hoped this technique will be repeated next year and in subsequent years by volunteers, perhaps through the Recorders of the Avalon Marshes (RoAM) project, and will also include monitoring the nearby Catcott Heath Somerset Wildlife Trust reserve. Part of Shapwick Heath is now actively managed by Natural England (NE) for the Argent & Sable, this involving scrub clearance, mainly through volunteer effort, and maintaining a range of age classes of the main larval foodplant at the site, Bog Myrtle *Myrica gale*.

In Wales, larval searches were undertaken for the first time at the Cors Goch site in Merionethshire, where the species was discovered in 2010. The survey was carried out in early August and a total of 19 larvae were found in spinings on Bog Myrtle, confirming this species as the foodplant at the site. Most larvae were in a small area of the bog adjacent to a conifer plantation, suggesting that shelter is important for this species at this otherwise open site.

#### **Barberry Carpet *Pareulype berberata***

*(Schedule 5 Wildlife & Countryside Act species)*

A small army of specialist volunteers and BC staff undertook an extensive survey of this species in the late summer/early autumn of 2012. At least 11 sites in Wiltshire, five sites in Northamptonshire, two sites in Suffolk and single sites in each of Gloucestershire, Oxfordshire, Dorset and

Cambridgeshire were surveyed, some of these sites including sub-sites. Whilst a few of the sites have never been known to support the moth, all extant and several former sites were surveyed. During 2012 larvae were found at six sites, several of these with fairly extensive populations, with Barberry *Berberis vulgaris* bushes found more widely than was previously thought. However, it was not found at three sites where it has been seen recently (one last seen in 2009 and at the other two it was last seen in 2011), despite the habitat looking suitable. Further surveys will be planned at these sites in 2013.

Disappointingly no larvae were found at the Cholderton Estate on the Hampshire/Wiltshire border following a release of larvae in 2011, and an additional release was undertaken. A further introduction was finally undertaken at the Ashton Keynes Millennium Green site, this a site where bushes that formerly supported the moth were relocated in 2001 following development work, with other bushes planted at the Green subsequently. A press release by the Cotswolds Water Park Trust, with the assistance of BC, followed this introduction, the story being picked up by several local papers and radio.

Another strand in the conservation of this species is the establishment of Barberry bushes and it is pleasing to report the inclusion of the planting of 100 Barberry bushes in a new Higher Level Stewardship agreement on a farm adjacent to an extant site. This planting will take place over the next two years. Plans are underway to plant around 150 bushes in Dorset, partly on the extant site, but also on a neighbouring site. We are currently fund-raising to bring this project to fruition.

### **Belted Beauty *Lycia zonaria britannica***

A total of 53 adults were counted along the transect, co-ordinated by Stephen Palmer, at the Lancashire site, this being walked on five occasions in 2012 when the moth was present. A peak transect count of 25 (six males and 19 females) was made on the 29 March, down on the peak of 2011 (40 adults). After extensive tidal inundation at the site on the 9 April, only one male and three females were counted on the 11 April, with numbers picking up slightly later in April.

A potential offshore wind farm threatens to cause damage to this site through the routing of cables. BC has worked closely with NE who have reminded the developers that the site is protected under the Morecambe Bay SAC, SSSI and RAMSAR, also highlighting the significance of the Belted Beauty population. Stephen Palmer of the local branch, with help from Graham Jones (BC), has liaised with the various organisations involved, including attending public consultation meetings and submitting comments as part of the consultation process, ensuring all are aware of the importance of this Belted Beauty population. Graham also undertook a site meeting with representatives, including an ecologist, from the development company to explain the requirements of the moth and its importance nationally.

Just a single male was seen at the North Wales site towards the end of the flight period, whilst the species has not been seen at the second England site, Meols Common in Cheshire, since 2010 despite searches.

### **Black-veined Moth *Siona lineata***

*(Schedule 5 of the Wildlife & Countryside Act)*

The monitoring results, a combination of transects and timed counts, demonstrated a slight recovery in numbers over 2011. The moth is still thought to be resident on seven localities that are sufficiently separated to be regarded as discrete colonies, the majority of these are managed for conservation purposes through agri-environment schemes or as a National Nature Reserve. This total, however, hides the loss of one former site as almost all suitable breeding habitat was lost on this site in 2011 and that situation largely remained in 2012. This habitat was degraded following the dry spring of 2011 combined with uncontrolled grazing by livestock and rabbits. Against this was the confirmation of another colony nearby, with 13 adults being recorded, following the single adult seen in 2011.

The moth was again not recorded at a further site, where there was a small colony between 2006 and 2009, despite the habitat looking ideal for the moth, although the largely northerly aspect may be a factor in this. At another site, which has been divided into two compartments, a gate had accidentally been left open which led to grazing pressure in the wrong compartment. Although the moth was seen in reasonable numbers here, the total represented a slight decline. This species



requires a delicate balancing act to maintain suitable breeding conditions, with unfavourable weather conditions, rabbit grazing, inappropriate grazing by cattle and scrub invasion all being threats. This incident clearly demonstrates the fragility of many of the sites for this moth.

The survey and monitoring during 2012 was undertaken by Sean Clancy under a contract from BC.

### **Bright Wave *Idaea ochrata***

This moth is now known to occur on three main habitat types: early succession, vegetated sand and/or shingle; early succession or reverted links golf-course rough/dry grassland; and sparsely vegetated, dry, waste ground. A total of 260 moths were recorded during the course of the 2012 monitoring programme (a combination of timed counts and transects), this down from 443 in 2011 but at a similar level to the 2010 total (265) and up on the totals of 2008 and 2009. No further sites were discovered, despite a search of one potential site, whilst the inland colony at Stodmarsh NNR first located in 2010 gave a 30-minute timed count total of 25, compared to at least 34 in 2011. At this site, the only leguminous plant growing in any frequency is Common Bird's-foot Trefoil *Lotus corniculatus*, with adult associations with this plant again apparent in 2012. This raises the possibility that this is the larval foodplant at this site.

An outstanding planning permission remains on part of one of the sites for this moth, this possibly also supporting the Sussex Emerald *Thalera fimbrialis*. A consultation process is underway and mitigation for any building is being considered to minimise the impact on these species.

The survey and monitoring during 2012 was undertaken by Sean Clancy under a contract from BC.

### ***Coleophora vibicella***

At the species' national stronghold in West Sussex, numbers remained very high in one field, with over 700 larval cases being counted in one hour. Six cases could be found in an adjacent field which has been subject to illegal heavy grazing over the last two years, showing that recolonisation is starting to take place.

At a Hampshire site which has been subject to over-grazing in recent years, 202 larval cases were found in a one-hour timed count which is a significant increase on the 66 in 2011 and perhaps reflects reduced grazing pressure. Cases were also found at a recently discovered site in Hampshire but difficulties with access mean that any management to maintain the habitat will be extremely difficult.

The Dorset site could not be monitored in 2012 due to access issues.

### ***Coleophora wockeella***

A two hour search of the sole site in March resulted in six cases found in four areas, although none were seen in the main colony site which had been heavily brushcut, making searching difficult. However, several cherry trees have been removed from part of this area, with scrub and Bracken *Pteridium aquilinum* also removed, resulting in more open conditions than in recent years. In another area one case was found on a verge that had clearly been swiped by a flail over the winter.

BC put together a bid together to undertake further work on this species and a conditional grant offer has been made by Biffa Award. This is planned to cover practical habitat management at the sole UK site for this moth. This will also include experiments to determine the best techniques for promoting Betony *Betonica officinalis*, the larval foodplant. Surveys and habitat assessments will be carried out at a minimum of ten other sites in the West Weald of Sussex and Surrey in order to determine whether any further populations remain undetected and to attempt to find a suitable site for a possible future introduction.

### **Dark Bordered Beauty *Epione vespertaria***

A transect is regularly walked at the England site throughout the flight season by Terry Crawford and David Baker, and it was clearly a difficult year for the species. The adult flight period started and

finished later than most recent years, with the numbers of Dark Bordered Beauty reduced across the whole transect. A peak in numbers was hardly apparent, with the highest count being seven (compared to 18 in 2011, although this was 98 in 2007). Sections of the transect had large patches of the larval foodplant, Creeping Willow *Salix repens*, in 2007, but in 2012 it was hard to find on at least three of these. One section partly suffered a burn in winter 2009/2010 and plants outside the burn are mostly low-growing and small. It is suspected that tall, emergent plants are favoured by ovipositing females. Given the concern about the state of the Creeping Willow on the site, consideration is being given to mapping the distribution and quality of the plant. If this is undertaken, it will provide a baseline which could be compared to any future surveys.

Hannah Foster, a University of Leeds student, repeatedly walked three short transects at 30 minute intervals from dawn to late morning, finding a large window for peak flight, from about 07.30 to 08.50hrs. This backs up earlier evidence of an early morning peak flight some time after dawn. Despite the low numbers of moths, Hannah observed three males showing directional flight followed by competition for access to a female low in the vegetation. This suggests that assembling of males to virgin females might be used to test for presence on potential sites.

As a result of a First Transpennine Express Green Grant, a volunteer day was held on 20 July, with seven people attending (two previous events were cancelled due to the bad weather). Sixteen male Dark Bordered Beauty were seen. One volunteer took Creeping Willow cuttings to determine if these can be easily propagated and planted to parts of the site with little or no foodplant.

In June there was evidence of heavy grazing of a nature not seen in previous years, with areas trampled to mud. At a subsequent conservation meeting, involving NE and the Ministry of Defence, it was agreed that cattle grazing will not occur again in this part of the Common (at least in the short term). Also at this meeting, restoration work on an overgrown fire break planned for 2013 was discussed. It was highlighted that this is near a hot-spot for the moth and care would be needed during its restoration.

In Scotland all known colonies were monitored and eleven potential sites were surveyed, covering Badenoch & Strathspey, Deeside and Sutherland. This was undertaken primarily by volunteers Tony Mainwood and Nick Picozzi, but also Pete Moore and Colin Campbell from RSPB, the latter as a sabbatical project. In Deeside it was a late season, estimated around two weeks late. Adults were found in eight out of ten clearings monitored. The highest clearing count was nine (five in 2011) with other counts being nine, three and two, the remaining being singles. A volunteer work party is planned in April 2013 to clear scrub from one of the occupied sites whilst negotiations are still ongoing with a farmer about implementing a suitable grazing regime to benefit the moth at another occupied site. In Sutherland five sites were surveyed but despite suitable habitat no Dark Bordered Beauty were recorded. These sites were being surveyed after having been alerted to an old specimen bearing a label, Sutherland. At Insh Marshes light trapping by Colin Campbell found two females and three males at the main colony but also single males in each of three different clearings away from the colony, giving a total of eight adults altogether. Elsewhere at the Strathspey site, light trapping during the flight period at all clearings produced only one male.

A meeting was held with the University of the Highlands and Islands to help identify research requirements to help guide the conservation of Dark Bordered Beauty that their students, or others, could undertake.

The Highland Aspen Group (HAG) has continued the propagation of Aspen *Populus tremula* of local provenance with the aim of planting trees out this spring at sites close to known Dark Bordered Beauty sites in Badenoch and Strathspey to enhance the Aspen resource. BC Scotland work closely with a range of organisations on this species, actions being co-ordinated by a Steering Group, including representatives from the RSPB, Cairngorms National Park Authority, HAG, Scottish Natural Heritage (SNH) and Coille Alba.

Unfortunately, due to a lack of resources, no surveys were undertaken in the Borders and Northumberland to follow up earlier records. We would like to take this opportunity to encourage surveys of these areas to try to locate as yet undiscovered populations.

The RSPB are thanked for their continued financial support of the work on this moth.

### **Dingy Mocha *Cyclophora pendularia***

The annual larval survey was again undertaken in 2012 in Dorset and the New Forest in the late summer. As for many other species, the year was clearly a poor one, almost certainly due to the poor weather conditions during the flight period, although inappropriate management or a lack of young willow *Salix* growth may be having an impact on this species on some sites.

Rather surprisingly, no larvae were found in north Dorset, where three sites were surveyed (two known to support the species). Additionally, no larvae were found in the New Forest (five sites surveyed), where this species can be difficult to locate, although we are aware of a couple of adults being recorded at one of the survey sites earlier in the year. No larvae were again found in Purbeck south of Wareham, although only Studland was surveyed. Elsewhere on the heaths in Dorset, larvae were found at seven sites, covering five 10km squares. All are known sites for the species, with ten sites being surveyed in total. Survey effort for this species has been considerably impacted by the reduction in resources in 2011, which continued into 2012, with many potential sites not surveyed. However, over the course of the survey about 330 willows were sampled.

We continue to work closely with the Forestry Commission, Dorset Wildlife Trust, the local BC branch and private landowners who own and manage sites for this moth to provide suitable conditions. There are still issues, for example at one site, the roadside verges, which support habitat for the moth, were again mown to provide a line of sight for drivers now that grazing livestock have been introduced.

A day was spent with a member of the National Trust's (NT) Biological Survey Team, to demonstrate how to find the species and what habitat conditions to look for, to encourage further survey for this moth.

### **Drab Looper *Minoa murinata***

An adult count at Hendre Woods, Monmouthshire, in late May produced only 16 Drab Looper, compared with 58 when the count was last done in 2010. Seven Drab Looper were also recorded elsewhere in the wood in 2012. Habitat management at the site was carried out over the winter by Forestry Commission Wales and BC volunteers, with the focus on opening up rides and creating scallops, to enable greater mobility of the moth within the wood. Only one Drab Looper was recorded elsewhere in Monmouthshire in 2012, in the Angidy Valley, Tintern, suggesting it was a poor year for the species in Wales.

Brief surveys were undertaken for the species in Dorset and parts of south Wiltshire with the moth being recorded from at least one and three sites respectively. Two of the Wiltshire sites are probably new for the species, one in an area that has recently been opened up by the Forestry Commission.

Elsewhere we have received reports that the species was found in Hampshire, a minimum of three sites in Sussex (at least one being new), three sites in Berkshire (one a new site), and from two new sites, amongst others, in Gloucestershire, with one found in Kent. The moth was also recorded at a light trap in the West Midlands in late July.

### ***Eudarcia richardsoni***

On Portland, Dorset, two projects are currently underway to control invading *Cotoneaster*, one led by the Dorset Wildlife Trust, the other largely in the Church Ope Cove area and co-ordinated by Plantlife. As part of these projects we have established several monitoring sites for this endemic moth. An initial survey was undertaken in late May/early June along the coastal strip and weaves on Portland, with five areas searched (comprising c.25 subsites), these guided by the proposed management plan giving areas to be targeted for removal of *Cotoneaster*. Several of these subsites had no potential habitat for the moth, although five subsites were identified as monitoring sites, with seven larval cases found during this initial assessment. A further three monitoring sites which are currently free of *Cotoneaster* will be identified early in 2013, bringing the total to eight sites. At each of these a fifteen minute search will be undertaken for larval cases (found by turning stones over) and a count taken. If no case is found this search will be extended to 25 minutes or until a case is found (whichever is soonest). This methodology should give a crude measure of population density. It is hoped that this monitoring will be undertaken in the years to come and compared year on year.

Additional searches for cases were undertaken earlier in the year, with ten cases found in about 3hrs searching in January, seven found during 100 minutes searching in February and 16 found in March in a 95 minute search. Fifteen areas were surveyed over these three visits, with the moth found at ten of these.

### **Fiery Clearwing *Pyropteron chrysidiformis***

*(Schedule 5 of the Wildlife & Countryside Act)*

Monitoring of the number of eggs was carried out at all known sites. The cold, wet weather in early summer would be expected to have had a catastrophic effect on this species but a brief warm and dry spell at the end of May may have allowed the species to breed successfully. In south Kent a substantial decline occurred at the one remaining strong population and the extinction of the moth in this area seems imminent. The one piece of good news in this area is that an adult and one egg were found at the inland site discovered in 2010 so this colony has managed to persist, albeit at a low level.

The situation in north Kent was somewhat better, with two of the three established colonies showing significant increases. The new site found in 2010 on a beach where the Environment Agency had carried out major restocking works, continues to thrive and is by far the strongest colony in the UK now. The number of eggs at three other recently discovered sites also showed significant increases and a new colony was discovered to the west of all previously known sites, indicating further range expansion in north Kent.

### **Forester *Adscita statices***

A brief survey was undertaken of this moth on a site in north Dorset with 16 seen in mid June over four different fields of this damp grassland site. Drop disc measurements were taken where the moth was found, with the average vegetation height over the four fields being between 20.1 - 22.85cm. The moth was seen nectaring on Meadow Thistle *Cirsium dissectum* and Marsh Thistle *C. palustre*.

Four moths were seen at a second known Dorset site, this a downland locality. Here the drop disc measurements gave an average vegetation height of 15.9cms, one individual was seen on a Creeping Thistle *C. arvense* flower.

We have also received reports of the moth from known sites in Wiltshire, Buckinghamshire, Gloucestershire, Somerset, Suffolk, Norfolk, Lancashire (found in four separate 1km squares on one area, with a peak count of 21), Co. Durham and Argyll, and from a new site in each of Sussex and Radnorshire.

### ***Grapholita pallifrontana***

We have been made aware of several records of this moth, which is associated with Wild Liquorice *Astragalus glycyphyllos*, during 2012, with records from three sites in Bedfordshire, one in Northamptonshire and four in Worcestershire. In Wiltshire a former site was searched, but the foodplant could not be found and has probably been lost, however, the moth was located at what is thought to be a new site. Searches of known sites in Herefordshire failed to find the species.

A search was made of one site in Dorset, a county without a previous record of the species. However, the plant was in small quantities and was being smothered by Bracken, consequently it was felt this was unsuitable for the moth. Meanwhile a search at a site in Somerset (another county where the moth has not been recorded) with a large quantity of the foodplant along a hedge-lined lane resulted in no adult being found. A search for larvae later in the year resulted in a few matching the larval description, although it will not be until next year before we can confirm the identity of these. Searches were also undertaken of former sites for the moth near Bury in West Sussex, but none were found and the best area of foodplant is mown, and the cuttings removed, each autumn when larvae would still be in the seedpods.

We would like to encourage searches for this species, both in the adult and larval stages. A possible approach could be to contact the relevant county botanical recorder or Local Records Centre to ask for site data relating to the foodplant. If searches are made we would like to know of successful searches or localities supporting quantities of the foodplant which could merit future searches.

### **Marsh Mallow Moth *Hydraecia osseola hucherardi***

Nocturnal monitoring of the moth was again undertaken in September 2012 at various sites on Romney Marsh, Kent/East Sussex. This entailed undertaking torchlight transects at four sites, whilst all potential habitat was surveyed at a fifth site. Three additional areas were surveyed, two of these habitat creation sites (where blocks of foodplant have been planted to encourage the moth). Numbers of the moth showed a slight increase in numbers and represented the highest total recorded since 2006, with numbers at the three Sussex sites increasing, whilst the two Kent colonies fared less well, with none seen at one of these (the first time since it was discovered in 2001). However, two individuals were found at one of the additional sites surveyed, this representing an extension to one of the extant sites.

At one site, during a late August visit, it was clear that an electric fence protecting the foodplant beds from cattle had not been working, resulting in trampling and grazing damage. This had been rectified by the time of a follow-up site visit with the grazier and NE a few days later and no further damage had been caused to the foodplant beds. During this visit a new area of potentially suitable breeding habitat was also located.

A degree student placed data loggers at a number of the locations to record temperature and humidity in September as part of a final year dissertation on aspects of the Marsh Mallow Moth ecology. It is hoped her results will be available in due course.

Away from Romney Marsh, we are only aware of a single record of the moth at a Medway colony, despite two visits by Ian Ferguson. Sean Clancy undertook survey and monitoring of this species on Romney Marsh in 2012 under a contract from BC.

### **Marsh Moth *Athetis pallustris***

Work on this species has been co-ordinated by Dr Paul Waring in 2012. Fifty-seven were recorded on the Rimac portion of the Saltfleetby-Theddlethorpe Dunes NNR, Lincolnshire, on 31 May, indicating that the population was in a reasonable shape at the start of the season. However, the larval monitoring undertaken on 13 September found the population density substantially down in numbers following the poor weather encountered over the summer. Fifteen larvae were found in the standard 12 litter pile array at Rimac, compared to 76 in 2011. Again, none were found at the traditional breeding area at Seaview, where larvae were formerly numerous in the 1980s and early 1990s and where the last one was recorded on 10 October 2003. Prior to 2012, the adult moth was last seen at Seaview on 26 May 2005.

Unfortunately no larvae were found in the litter pile array at the introduction site just to the north of Seaview in 2012, but where two had been recorded in each of 2010 and 2011, following the release of 20 larvae in September 2009. This introduction site was formerly a field growing cereal crops but which has been reclaimed and converted back to potential habitat over the last decade. However, one adult male was light-trapped just over the hedge from the establishment field on 31 May, in the Seaview field, and it is considered this probably originated from the introduction site. The Seaview field has gradually turned into a swamp in recent years. This is probably due to silting up of the drainage and to the growth in height of a nearby shelterbelt of trees. The sward in this traditional breeding area now appears too tall and lush and would seem unsuitable for the Marsh Moth. It always exceeds 10cm in height by September, as measured by the Boorman drop-disc method, in contrast to the breeding area at Rimac, which is generally much less than 10cm tall.

A single male was also recorded at Gibraltar Point NNR, Lincolnshire, in 2012, on 1 June by a team of volunteers led by the Lincolnshire County Moth Recorder Colin Smith. This confirms the continued presence of this moth on this reserve, the only other known site for the species in the British Isles.

### **Narrow-bordered Bee Hawk-moth *Hemaris tityus***

A workshop on the Narrow-bordered Bee Hawk-moth was held at two sites on Dartmoor, Devon, being run by Dr Barry Henwood and BC staff. The event was targeted at existing volunteers who already record Marsh Fritillary *Euphydryas aurinia* which can occur in similar habitats to the moth, thereby maximising the data collected whilst they are out surveying. The event was well attended (17

participants) and several Narrow-bordered Bee Hawk-moth were recorded.

The Two Moors Project Officer provides habitat management advice and support in carrying out required works on farms across Dartmoor and Exmoor. Management advice and support has been offered this year to 38 of the Dartmoor Marsh Fritillary sites, and of these ten are known to support the moth. The type of support ranges from offering advice on appropriate grazing (stocking levels, timing etc.) to help with accessing funding through agri-environment schemes to carry out required works (scrub control, fencing, etc). Practical management is planned on six of these sites in the coming winter. Last winter (2011/12) scrub control was carried out across all ten sites by contractors or volunteers, with a total area cleared of around 3ha.

During the year we also received reports of the moth from Dorset, Wiltshire and Avon, and in Scotland from Argyll (including 2 new sites), East Inverness (including a new site), West Inverness (including a new site), Moray, and Mull (a new site), with larvae found at a site in East Ross.

### **Netted Carpet *Eustroma reticulatum***

John Hooson (NT) and Graham Jones (BC) report on the continued success of Netted Carpet conservation in the Lake District and north Lancashire. The increasing scale of the annual monitoring task means that a large band of enthusiastic, sharp-eyed volunteer surveyors (including BC members) is essential, and this year's count could not have been completed without their help.

Taking place from 6 - 10 September the monitoring focus was on the suite of cattle-grazed woods near Coniston, the re-introduction sites at Derwentwater, the north Lancashire locations, Muncaster Castle in south-west Cumbria, and the close network of sites near Windermere town.

Despite the apparent impact of a cool, wet summer in delaying larval development by perhaps a fortnight, resulting in many difficult-to-spot early instars, the counts showed that Netted Carpet has had a pretty good year. At Coniston the overall total larval count of 892 was 15% up on 2011. This was influenced by the lack of deer grazing this year after decimation of a large stand of Touch-me-not Balsam *Impatiens noli-tangere* in 2011. Especially encouraging was the count of 230 larvae at Derwentwater (80% up on 2011) and the observation of further natural expansion of the moth onto nearby balsam patches. Although geographically rather isolated, the Muncaster Castle population remains strong, having been encouraged by the efforts of staff from the World Owl Centre. Some of the balsam stands, complete with larvae, grow in the large owl aviaries and it's a brave person who stoops to count caterpillars whilst an Eagle Owl *Bubo bubo* watches from above!

The Lancashire sites were surveyed on 10 September and provided similarly positive results to the Cumbrian sites. At Hynning Scout Wood the total larval count was 204, which was broadly equal to last year's count. While at the private site the total count was 270 - a 73% increase on the 2011 figure. This suggests that recent small scale habitat management at this site - creating ground disturbance using vehicles - has paid off.

At Hynning Scout Wood balsam numbers had decreased by 29% on last year's figures, to 2300. Bramble and other aggressive perennials have begun to dominate at all the balsam sub-sites within the woodland, and because of this a programme of habitat management, far larger than what has been undertaken previously has been agreed with the wood's owner, The Woodland Trust. This will be undertaken over the winter of 2012 - 13 as part of the BC Morecambe Bay Butterfly Task Force project.

### **New Forest Burnet *Zygaena viciae argyllensis*** (Schedule 5 of the Wildlife & Countryside Act)

Butterfly Conservation Scotland (BCS) volunteers assisted with both the monitoring of the adult moths and vegetation at the UK's sole site in Argyll in partnership with SNH. The site was visited on five days in July with mark, release and recapture undertaken on four of them. This estimated the population at the main site at 12,200 and for the adjacent site at 2495. Timed counts were also undertaken with 230/hour counted on the main site and 122/hour on the adjacent site. These counts show that the moth population was at an all time high. Vegetation data was also collected repeating previous monitoring methodologies by sampling five fixed quadrats. This data is currently being analysed but it seems to echo concerns that the sward is becoming too rank and some very light

grazing is required. There are also concerns that bracken may be encroaching in some areas. BCS and SNH plan to raise these concerns with the owner in the coming months but the practicalities of undertaking controlled grazing and bracken control at the site are not straight forward. Work on New Forest Burnet is overseen by the Burnet Study Group.

### **Olive Crescent *Trisateles emortualis***

Following the discovery of 12 Olive Crescent in late June in a wood to the south of Ipswich, Suffolk, Tony Prichard and Neil Sherman found larvae in the same wood in September, feeding on the dead leaves of oak *Quercus* and Beech *Fagus sylvatica*. Following that success, two larvae were found in another nearby wood on Sweet Chestnut *Castanea sativa*. The suspicion is that this is a recent colonisation.

### ***Phyllonorycter sagitella* & *Sciota hostilis***

Whilst undertaking a search for the larvae of *Sciota hostilis* in late July in the Orlestone Forest complex, Kent, two mines of *Phyllonorycter sagitella* were found in one woodland block, a Kent Wildlife Trust reserve. Further mines of the autumn generation were found in another part of the complex in October. These are the first records for Kent, and apart from the recent discovery of this species in Cambridgeshire, are the only records outside the West Midlands and North Wales. There is clearly the possibility that this moth has been overlooked elsewhere and searches are encouraged. Unfortunately, no confirmed *S. hostilis* larvae were found.

### ***Phyllonorycter scabiosella***

Part of one site in Surrey formed a viewing area for the Olympic cycle road races and was subject to considerable visitor pressure as well as mowing to benefit visitors. Surveys for the mines of *P. scabiosella* after the event found no larvae within the affected area and a thick mat of dead grass covering most of the foodplant. The moth remains fairly common elsewhere on the site but there is concern that further events following the Olympic route may result in repeated damage to this area.

### **Reddish Buff *Acosmetia caliginosa***

(Schedule 5 of the Wildlife & Countryside Act)

We have received a report that only three adults were recorded this year. However, additional survey effort, under the auspices of the Hampshire branch of BC, which was to include looking at one or two potential sites, was cancelled due to the appalling weather conditions, and the low count is most likely due to the adverse weather. Site management continues under the auspices of the Hampshire and Isle of Wight Wildlife Trust.

### **Scarce Pug *Eupithecia extensaria***

Studies of larval ecology were undertaken by an MSc student in north-west Norfolk. Initial results showed only an association between the size of foodplant patch and presence of larvae but unfortunately a copy of the dissertation has not been supplied by the student.

### **Scarce Vapourer *Orgyia recens***

Julian Small (NE) organised two larval search days for this species on the Humberhead Levels NNR. Unfortunately none were found. However, during a botanical survey in early June, the team found two larvae (one final instar and one in its penultimate instar) in an area where the species was last found in the 1970s. One was found on willow, the other on birch *Betula*, both bushes being adjacent to small ditches. The habitat where they were found is extremely plentiful in the area with the scrub being fairly young.

### ***Scythris siccella***

Management at a small site, the only known location for the species in the country, has involved digging small scrapes in the autumn over the last few years to encourage the early successional stages (on sandy soils) required by this species. Monitoring was again undertaken in 2012, involving counts of larval tubes (and adults if seen). Forty-eight larval tubes were found, surprisingly the same

total as in 2011, with 27 found in the previously dug scrapes. The larval tubes were found associated with a range of plants, although the majority were found under Kidney Vetch *Anthyllis vulneraria*.

In the autumn of 2012, a further 14 small scrapes were dug as the wet summer had resulted in lush conditions, with moss and grass prevalent in places, although some of the previous years scrapes were still visible.

### **Shoulder-striped Clover *Heliothis maritima***

No adults or larvae were found on Holt Heath, Dorset, this year, despite searches, however, the weather conditions were frequently less than ideal when the searches could be made. In the New Forest, early instar larvae were found at two sites through sweeping by day, these both being known sites. Two further sites failed to produce the species, one of these being a former site. Evidence is building that this is a species with a preference for young Cross-leaved Heath *Erica tetralix* growing in rather open areas, i.e. with plenty of bare ground. In the New Forest these conditions are often found following controlled burns which promote growth for grazing animals.

A day was spent with a member of NT's Biological Survey Team, to demonstrate how to find the species and what habitat conditions to look out for.

### **Silky Wave *Idaea dilutaria***

BC work closely with the Bristol Conservation & Science Foundation (BCSF), Bristol Zoo Gardens, Avon Gorge & Downs Wildlife Project, NT and NE at the sole English site for this moth in Avon Gorge. Here, since 2010, BCSF have taken over the monitoring and survey for this species, producing an annual report (containing a series of recommendations) which is circulated to a range of interested parties. Transects were carried out over an eight week period, with six key sites (three on the Bristol side, three on the Somerset side) in the Gorge being visited regularly, enabling a peak count to be taken. Eight additional satellite sites were also surveyed throughout this period. The moth was found at all six key sites and six satellite sites.

2012 survey counts were higher at the three Bristol side sites than in any previous year, with a peak of 127 being noted at one site. Two of these were at sites where a small number of goats had been introduced the previous year in an attempt to control scrub in a sustainable fashion. Dramatic scrub reduction has been noted in these areas and it may be that the Silky Wave has benefited from this management. However, counts were lower at the three Somerset key sites than in 2011. Habitat management had been implemented here prior to the flight period, so it will be interesting to see if there is a positive response in these areas in the years to come.

At one site, a quarry, adult moths were found in good numbers (with a peak of 21) where no rock-rose *Helianthemum* is present, hinting at an alternative foodplant, with Common Bird's-foot Trefoil *Lotus corniculatus* being suspected as a potential hostplant.

Adult counts were not undertaken at the two Welsh sites (South Gower and Great Orme's Head) in 2012 due to wet and windy weather throughout most of the flight season.

### **Slender Scotch Burnet *Zygaena loti scotica***

On Mull, work has focused on management as well as survey and monitoring. BC Scotland maintained contact with all the owners of sites and potential sites, and held five on-site meetings. The main colonies on the National Trust for Scotland's property at the Burg on the Ardmearach peninsula were monitored by NTS staff and Thistle Camp volunteers in June. After a bad year in 2011, which was possibly due to poor weather in the monitoring period, numbers in 2012 were back up to near normal.

Elsewhere at the two newer northerly colonies (Langamull and Glemgorm) the moth was found to be more widespread than previously thought. These were surveyed by local volunteers as well as on a BC Highland branch Slender Scotch Burnet field trip. The moth was also refound at Kilninian for the first time in four years. This site has been threatened through invading *Cotoneaster*, which has been cleared over the last 5-6 years by both local volunteers and contractors. This rediscovery provided



sufficient impetus for further *Cotoneaster* clearance, with 20 local volunteers helping out over the course of a weekend in September.

Work on the Slender Scotch Burnet is guided through the Burnet Study Group, which includes specialists and representatives of organisations including SNH and the NTS.

### **Straw Belle *Aspitates gilvaria***

Fourteen sites were surveyed in Kent in late July and early August, this being a mix of known and potential sites. However, the weather conditions were generally unfavourable, frequently being very breezy and cool, and the moth was only located at two sites (both known sites). Encouragingly, the turf at one key site looked in a more suitable condition than the previous two years, following overgrazing, with several adults seen. A site meeting was held at this site with NE and the site owner to discuss the ecology of the moth and its requirements. Interestingly, land on the adjacent holding has been reclaimed from agricultural fields and has been seeded with downland plants. Through management there is the possibility that this could eventually become suitable for the Straw Belle.

Unfortunately, one site where the moth had been seen in small numbers (and where there was also a good population of Chalk Carpet *Scotopteryx bipunctaria*) had been badly overgrazed by the time of the visit, with several Highland cattle still on the site. Needless to say no Straw Belle were seen, with only a single Chalk Carpet located. NE was informed and is looking into this incident.

At the main Surrey site, Box Hill, there was concern over the potential impact of trampling from spectators hoping to watch the Olympic cycling road race. Gail Jeffcoate of the Surrey BC branch and others liaised with LOCOG and other organisations raising the profile of this (and other species) and concern over potential trampling. As a result of invertebrate and botanical surveys commissioned by LOCOG and much careful planning of spectator viewing points, key areas were fenced off from the public and little evidence of encroachment was noted over the course of the Olympic events. This effort was rewarded in August when the moth was seen here in good numbers on several occasions, along with many Chalk Carpet. However, given the raised profile of the site there is some cause to be concerned for future years and the potential for increased visitor pressure, although site managers are well aware of the importance of this site for the moth. Against this positive news, the moth was again not seen at its second Surrey location, despite several visits, it being last recorded here in 2010.

### **Striped Lychnis *Shargacucullia lychnitis***

2012 was a poor year for the Striped Lychnis, probably due to the unfavourable weather conditions during its flight period, resulting in low numbers of larvae later in the year. It was noticeable that several roadside verges in at least parts of its range were overgrown and rather rank at the time of the larval searches, again the wet summer is likely to have been the cause of this lush growth.

The Hampshire & Isle of Wight Wildlife Trust have been monitoring larvae of the species in an area of north-east Hampshire. Only 20 larvae were found, the lowest total since surveys began in 2009, with one new verge for the species contributing just over half this total. Additionally the number of spikes of the foodplant, Dark Mullein *Verbascum nigrum*, was the lowest recorded during these surveys. Unfortunately some of the best roadside verges were cut in August for lines of sight for vehicle drivers after the rapid summer growth, this undoubtedly impacting on the moth in this area.

Two students undertook studies on the moth in Hampshire and Sussex to examine the ecological requirements of the species. Unfortunately, they also encountered low larval numbers, struggling to find suitable study sites. However, it is thought by both that enough results were eventually collected and we now await the results of these studies.

### **Sussex Emerald *Thalera fimbrialis***

*(Schedule 5 of the Wildlife & Countryside Act)*

BC continue to work closely with NE, EDF Energy, Magnox, RSPB and Cemex at Dungeness to conserve this species. Forty-three larvae were found in 2012 during the monitoring over the 36 designated survey sites, this being slightly up on the total in 2011. At 30 of these sites a 30-minute search for larvae was undertaken concentrating on the main larval foodplant, Wild Carrot *Daucus*

*carota*. Where this was present in insufficient quantities then the secondary larval foodplant, Common Ragwort *Senecio jacobaea*, was searched. At three sites, searches were curtailed due to a lack of potential foodplants. An increasing number of designated sites within part of the power stations compound have failed to produce any records of the target species for several years, despite holding good numbers in the early 1990s. This is thought to be due to the lack of the primary foodplant due to an increase in the number of rabbits and subsequent overgrazing, coupled with a lack of recent ground disturbance.

There was a decline in larval numbers in 2011, thought to be due, at least in part, to the exceptionally dry conditions that spring. It is considered that the low numbers encountered in 2012 were a result of the poor larval success in 2011, with counts of adults at light traps in 2011 also being low. In 2012, 84 adults were found in the area at various light-traps, this being up on the 2011 total of 58, but still considerably down on previous years.

Following on from experimental plots on the RSPB reserve, several habitat creation plots are now in place, with the establishment of rabbit exclosures at three localities (and one more unfenced), including within the power stations compound. Wild Carrot has been seeded in all of these, with monitoring during 2012 showing successful germination of Wild Carrot at three of these.

As in 2011, no larvae were found at the small site near Deal, Kent, and it is possible the drought conditions on 2011 have resulted in the loss of this colony. However, the finding of a single adult at nearby St Margaret's Bay could indicate that there is still a breeding population in the area.

Sean Clancy undertook survey and monitoring of this species in 2012 under a contract from BC with funding from EDF (British Energy) and Magnox, the habitat creation project was funded by these companies as well as Cemex and RSPB.

### **White-mantled Wainscot *Archanara neurica***

For the first time, the moth was recorded in Norfolk. We have also received a report of a singleton of this species at a new site in Suffolk, with six being found at a known site.

### **White-spotted Pinion *Cosmia diffinis***

What is thought to be the first modern record of the species in Lincolnshire was made in mid August. Elsewhere the moth was recorded in Northamptonshire, Cambridgeshire (at least four sites) and Huntingdonshire.

## **3.2 UK BAP moth newsletter**

An email newsletter covering UK Biodiversity Action Plan Priority moths is sent out during the field season providing information about when species are being seen across the country so that recorders can also target those species in their area. To submit sightings of UK BAP moths for the newsletter, or if you would like to be added to the mailing list, please contact Tony Davis [tdavis@butterfly-conservation.org](mailto:tdavis@butterfly-conservation.org). (All records should also be submitted to the relevant County Recorder as usual.)

## **3.3 Update on UK BAP butterflies - a summary for the year 2012**

Highlights of work carried out on selected UK Biodiversity Action Plan (BAP) butterflies is provided below. Further work on UK BAP butterflies is also reported in sections 4 (regional updates) and 6 (news and notes). Factsheets for the majority of the following species can be downloaded from [www.butterfly-conservation.org/butterfliesspeciesfactsheets](http://www.butterfly-conservation.org/butterfliesspeciesfactsheets)

### **Duke of Burgundy *Hamearis lucina***

Declines in the number of Duke of Burgundy colonies means that there is the need for further efforts to conserve the butterfly in the UK. Butterfly Conservation has established landscape-scale projects in some regions, such as *Dukes of the Edge* in the South East and the work on the North York Moors.

However, there has been a need to compile a national Duke of Burgundy dossier in order to target other priority areas.

The aim of the dossier is to give a national overview of the population status of the butterfly, along with analysis of habitat characteristics and population parameters. Compilation of the national Duke of Burgundy site dossier involved the collation of data from many sources, including BC staff and branch members.

A summary of the dossier results shows that since the 1980s at least 260 known colonies have become extinct, this represents a loss of 62% of colonies. 160 colonies were still classed as extant from 2008-2012. The extant colonies were present within fifteen counties and seventeen landscapes in the UK. Significant populations occur on the South Downs, the Tytherley area and Salisbury Plain, the Cotswolds also remains a stronghold. Concentrations of colonies remain in the North Kent Downs, the North York Moors and the Chilterns.

Of the 160 remaining colonies 104 are small, 33 are medium and 19 are large colonies. The large colonies are mainly located in the Salisbury Plain and Tytherley area of Wiltshire and Hampshire. Most of the extant colonies are located in the south east region (47% of colonies), with colonies also located in the south west (42%) and Northern England (9%); two colonies remain in Lincolnshire. Grassland habitat accounts for most of the remaining colonies with 80% being grassland and 20% woodland.

A summary of the cause of the extinctions (where this information is known) shows that extinctions have generally been caused by a lack of management targeted for the species. This is also one of the largest threats to extant sites, as Duke of Burgundy requires specific active management. A lack of management on grassland sites has decreased habitat quality because of large-scale scrub or woodland encroachment and through increasingly rank grassland reducing foodplant abundance. Neglect of woodland is also one of the major causes of the woodland extinctions as open areas such as rides and glades have been lost, shading out the foodplant.

Extinctions have also been caused by too much management, especially when restoring calcareous grassland, where management involves excessive scrub clearance and increased grazing levels. This leaves the habitat unsuitable for Duke of Burgundy and may occur when there are conflicting management objectives such as short-turf species.

The dossier has important implications for future management as all extinct and extant Duke of Burgundy sites within the UK were mapped. These maps, along with information from the dossier, identify landscapes and networks which would benefit from targeted management.

Contributed by Rachel Jones, Assistant Conservation Officer, [rjones@butterfly-conservation.org](mailto:rjones@butterfly-conservation.org)

### **Heath Fritillary *Melitaea athalia***

The Heath Fritillary remains in the following four areas; Exmoor, Tamar & Lydford Valley, Blean Woods and Essex. In 2012 there were a total of 42 colonies recorded across 24 sites. The numbers recorded this year in areas other than Tamar & Lydford Valley were extremely low in comparison to previous years. In general the weather made the conditions for surveying very difficult, for example in Exmoor we had to cancel three dates and the actual survey was conducted in weather that was not ideal.

The **Tamar & Lydford Valley** populations seem to have been the most successful at expanding their size and occupied habitat this year. In Greenscoombe Wood, two colonies were recorded in 2012. The medium and large colonies present have expanded in size (both small in 2010) however; a very small colony present in 2010 and 2011 was not recorded this year. The new management regime at Greenscoombe Wood, which began in 2009, has been successful so far with the colonisation of recently cleared habitat. However, the overall area occupied has decreased slightly from 2.9ha in 2011 to 2.7ha in 2012 due to some areas becoming unsuitable. The amount of suitable habitat for the Heath Fritillary has increased since 2009 due to the management funded through Higher Level Stewardship (HLS), which is hoped to continue for the foreseeable future.

At the BC **Lydford** reserve, a total of 245 adults were recorded (144 in 2011), but only two individuals were recorded on the forest transect (one individual on two dates) in comparison to a total of 11 recorded in 2011. Unfortunately, there were none recorded during a timed count on the previously occupied private land.

In **Exmoor**, organising the formal BC staff monitoring this year was very difficult owing to the cold, wet and windy weather during the flight period. A date was eventually set for 5 July and as well as being three weeks past the usual 'peak' the weather was not entirely suitable. Only two individuals were recorded on two of the nine sites surveyed that day. In total there were ten sites occupied with positive records of more than one individual. However, there was good news with an Exeter University MSc student studying Heath Fritillary habitat discovering two present at Codsand Moor, a site where the species is thought to have been extinct since the 1990's, and confirming the new colonisation at Horner Wood Edge.

In 2012 the Heath Fritillary occupied six sites across the **Blean Woods** complex; East Blean, West Blean & Thornden Wood (including Cole Wood), Clowes Wood and Blean NNR. The total of 23 colonies recorded in 2012 across these sites was the same as in 2011. The colony sizes comprised of six large, seven medium and six small. There were four new colonies recorded, three in West Blean and Thornden Wood and one in East Blean. The total occupied area in the Blean Woods complex in 2012 was 37.07 ha, the largest area occupied since 1980. With the continued commitment to creating additional habitat through coppice coupes and ride management the butterfly is likely to remain in this landscape.

Contributed by Caroline Kelly, Conservation Officer, [ckelly@butterfly-conservation.org](mailto:ckelly@butterfly-conservation.org)



Above left: Heath Fritillary in Blean Woods complex; above centre: Cow Wheat *Melampyrum pratense*; above right: pony grazing at Greenscombe Wood, Tamar Valley

### **Large Blue *Phengaris arion***

The Large Blue is currently present in two landscapes with BC led projects; *Expanding the Large Blue in the Polden Hills* in Somerset and *Conserving the Painswick Valley's Rare Butterflies* in the Cotswolds. In 2012 the adult butterflies had to contend with wet, cold and windy weather interspersed with sunny spells. However, despite the weather, the egg counts on Collard Hill were the highest ever recorded and numbers on Green Down also increased dramatically.

The survey results from 2012 indicate that the national population of Large Blue is the largest ever recorded. Well managed, core populations either increased or held their own whereas small populations were vulnerable to stochastic events, like the poor weather, which did not encourage dispersal.

In the Polden Hills the SITA funded *Expanding the Large Blue in the Polden Hills* project has just over one year to run. This year, members of the Large Blue Action Group, partner organisations and

their volunteers have met on each other's sites to carry out the conservation works of scrub management and Wild Thyme *Thymus polytrichus* planting. This year there have been 10 days of volunteers managing approximately 1ha of scrub on a total of five sites (three Somerset Wildlife Trust and two National Trust) and 11 volunteer days thyme planting, with a total of 3879 plants planted (see also 4.7.3). In the Cotswolds, two introductions were made with funding made available from the BBC Wildlife Fund. Local BC Gloucestershire volunteers were given the opportunity to accompany David Simcox and Sarah Meredith as they released caterpillars onto one site and were able to watch them being adopted by the red ant *Myrmica sabuleti*. It is hoped that the *Conserving the Painswick Valley's Rare Butterflies* will enable new habitat to be restored and that natural colonisations will occur at some point in the future.

In both landscapes targeted management is driven by the findings of detailed habitat surveys which are undertaken by specialist contractors David Simcox and Sarah Meredith who also advise site managers, landowners and regional Natural England staff. Development work in three other regions has continued creating the opportunities for landscape-scale projects to be developed in the future.

Contributed by Caroline Kelly, Conservation Officer, [ckelly@butterfly-conservation.org](mailto:ckelly@butterfly-conservation.org)



Above: BC, Somerset Wildlife Trust and Langport Explorer and Scout group planting Thyme in the Aller Hills

### **Marsh Fritillary *Euphydryas aurinia***

BC's long-term monitoring of the Dorset sites continued during 2012, with six of the seven sites visited in late summer using the standard techniques; either a transect sample or a full survey of all suitable habitat, depending on site size.

The results were very disappointing this year with larval webs only recorded at three of the monitored sites. No larval webs were found at Deadmoor Common, Lydlinch Common or Hod Hill. The results for Lydlinch Common and Hod Hill are concerning as these sites generally support good populations of the species and these results are probably due to the very wet season and it is expected that the species is still present at these sites. The poor weather during the flight period will probably have affected female mating and egg laying opportunities and egg survival. Prolonged wet weather in late summer can cause larval webs to disintegrate and be much less obvious. Larval webs may have been more difficult to locate on sites but with experienced observers this shouldn't have been a major factor. Management regimes at most sites have been maintained as it would be premature to make any changes due to the impact on numbers caused by the weather apart from where increased grass growth has been a problem.

Encouragingly, numbers at Powerstock are higher than in 2011, and demonstrates a response by the species to the work by Dorset Wildlife Trust, with BC's advice, to adjust the grazing for the needs of this species.

Following the publication of our conservation report on the status of the Marsh Fritillary in Dorset from 1985 to 2010 the work has been further promoted through inclusion as one of 12 evidence-based case studies in our landscape-scale report (Ellis *et al.*, 2012) demonstrating the effectiveness of a

well-designed agri-environment scheme.

Contributed by Dr Caroline Bulman, Senior Species Ecologist, [cbulman@butterfly-conservation.org](mailto:cbulman@butterfly-conservation.org)

### **Pearl-bordered Fritillary *Boloria euphrosyne***

In 2010 a co-ordinated survey for Pearl-bordered Fritillary was undertaken in the south-west in the counties of Gloucestershire, Devon and Cornwall. The aim of this survey was to assess the status of this declining species and was a regional continuation from a nationwide survey conducted in 2004. Results of the 2010 survey showed a 31% decline in the numbers of extant colonies since 1997, but declines had slowed since 2004. Despite declines, 22 new colonies were recorded across the three counties in 2010. Declines in the numbers of colonies shown by the analysis in 2010 highlighted the need for further work on the Pearl-bordered Fritillary to assess other regional trends. The first stage of this is the compilation of the English Pearl-bordered Fritillary site dossier which will display data collected in south-west in 2010 survey, along with data from other regions in England, to provide an indication of trends at a larger scale.

Details were collected from other BC staff on extant and extinct colonies in the West Midlands (including the Wyre Forest, Owestry Uplands and Herefordshire Commons), northern England (including Morecambe Bay Limestones and North York Moors) and from the south east England colonies. Dossier pages for the regions are still being produced, so summary results are not yet available. Once data collection is complete a dossier of all known English colonies will be produced. The dossier will provide information for each site describing; habitat type, habitat condition and management, along with a site map and general site information. Data will be input into a main spreadsheet allowing analysis and summaries of extant and extinct sites. This information can be compared to the results from the last Pearl-bordered Fritillary dossier completed in 1997 to analyse any significant changes. The aim of the dossier is to assist in targeting management, provide information, summarise the trends and to help with the identification of future landscape-scale projects.

Contributed by Rachel Jones, Assistant Conservation Officer, [rjones@butterfly-conservation.org](mailto:rjones@butterfly-conservation.org)

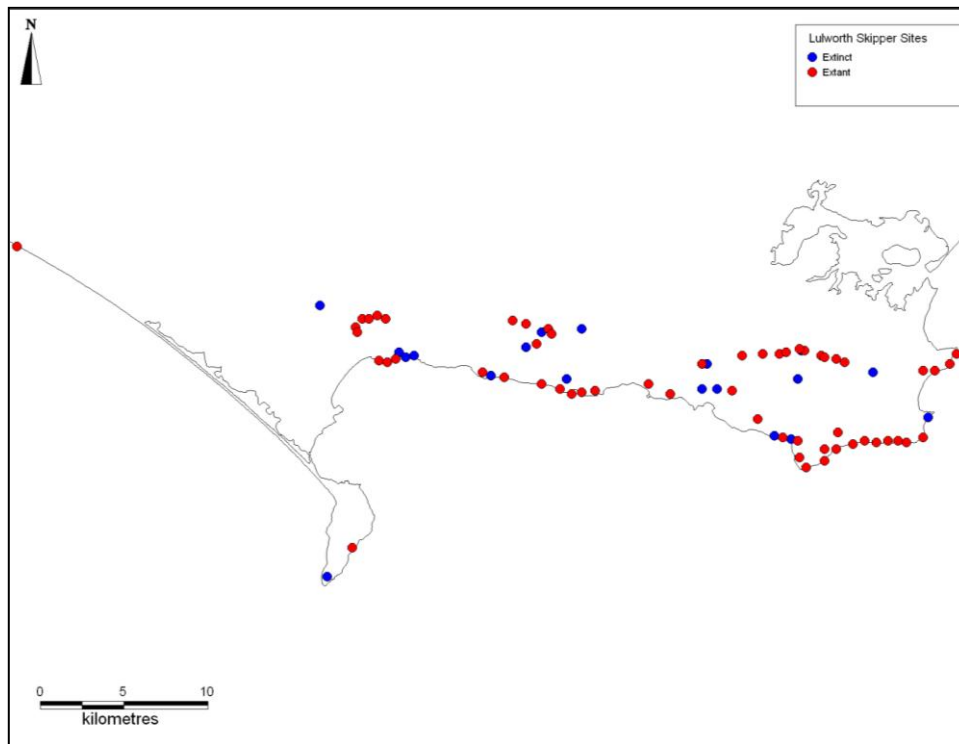
### **Lulworth Skipper *Thymelicus acteon***

Regular transects conducted on Lulworth Skipper sites have shown a marked decline in populations in recent years. This highlighted the need for a recent survey of all known extant, extinct and potential Lulworth Skipper sites with an aim to assess the current population size of colonies, the colony distribution and site habitat suitability.

The methods were extracted from previous studies on Lulworth Skipper; Pearman (1998), which was based on a survey conducted in 1978 (Thomas, 1983). Comparing the 2010/12 data to the previous results allowed an assessment of how the distribution and populations have changed. Surveys and habitat assessments were initially conducted in 2010. Following this, in 2012 some potential sites and sites with few or no Lulworth Skipper in 2010 were re-visited. Transect data was used to provide comparable estimates on population size. Habitat data was collected on relevant attributes, such as sward height and Tor-grass abundance, and used to help explain population changes.

The results show that the range of the Lulworth Skipper within Dorset remains similar and has not changed significantly since 1997/1978 (Figure 1). Lulworth Skipper are still confined to the south of England mainly along the Dorset coastline and along the Purbeck Ridge with some additional inland colonies and one colony located in the far west of the range.

57 Lulworth Skipper colonies were present in 2012, 20 of the 71 colonies present in 1997 were extinct in 2012, which equates to a loss of 28% of colonies. Six new colonies were identified in 2012. No large colonies of Lulworth Skipper remain, 38 colonies are small and 17 are medium sized colonies. Population increases were found on 32% of colonies, but 54% suffered from population declines (16% had population losses of over 90%).



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**Figure 1: Locations of extinct and extant Lulworth Skipper colonies 1978 – 2012**

Analysis of the habitat variables suggests some population decreases and increases could be linked to changes in sward height, through the relaxation of grazing or through over-grazing. Scrub and woodland encroachment is also likely to be responsible for some population declines and extinctions. The study results have important implications for advising future management of Lulworth Skipper sites. Challenges in managing for Lulworth Skipper are linked to conflicting land uses, but there is potential for future work on the species, through improving habitat suitability by scrub management and changes to grazing regimes and by changing the cutting timing of roadside verges, improving connectivity.

The work on this study relied on previous survey work conducted by Katrin Pradel and Stuart Woodley (Bournemouth MSc student) in summer 2010. Stuart Woodley also assisted with some of the 2012 transect counts.

## References

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- Thomas, J.A. 1983. The ecology and status of *Thymelicus aceton* in Britain. ***Ecological Entomology*, 8:** 427-435.

Contributed by Rachel Jones, Assistant Conservation Officer, [rjones@butterfly-conservation.org](mailto:rjones@butterfly-conservation.org)

## 3.4 Farmland Butterfly Initiative

The Farmland Butterfly Initiative (FBI) was launched in 2012 and is a partnership project between Natural England (NE) and Butterfly Conservation. The objective of the project is to test and pilot the delivery of Favourable Conservation Status for Section 41 priority butterfly species (BAP species) across England, by enhancing the effectiveness of two key delivery mechanisms for butterfly conservation management in England – Environmental Stewardship (ES) and SSSI management.

Environmentally friendly farming schemes such as Higher Level Stewardship (HLS) have been in existence for a number of years and support farmers in changing or maintaining more sympathetic and less-intensive farming methods that help to provide habitat for wildlife. Some butterfly species are

starting to benefit but others, particularly our most rapidly declining species, are not faring so well. This new project aims to work with NE advisors working with and supporting farmers with land of high nature value to ensure that farming practices are tailored to the needs of butterfly species.

The project, currently in the pilot stage, focuses on seven of our most endangered species namely, **Duke of Burgundy**, **Lulworth Skipper**, **High Brown Fritillary** *Argynnis adippe*, **Heath Fritillary**, **Marsh Fritillary**, **Pearl-bordered** and **Small Pearl-bordered Fritillaries** *Boloria selene*, but it is hoped that this can be increased in future years to include a wider range of Lepidoptera.

These species require management features which are not always provided by standard management of the habitats where they breed. Where target species are present, they will often require modifications of standard prescriptions within an HLS agreement to include some key features for management. We have developed the 'Big Three' key features as shown in the table below. In addition to this we have developed a set of tailored prescriptions for each species which can be used by NE advisors; these include the ideal type of grazing stock, timing of grazing, sward heights, host-plant density etc.

**Table 1. The 'Big Three' features to manage for**

Big Three Feature	Management needed to achieve feature
1) Structural variety and bare patches	Extensive grazing to create range of turf heights at end of growing season. Regimes include light grazing or cattle grazing. Aim for scattered small patches of bare ground which provide warm micro-climates for adults/larvae and where food-plants can germinate. They may be provided by hoof impact of cattle grazing, sheep tracks, pulse grazing, scrub clearance, burning, and other disturbance regimes
2) Summer nectar	Extensive cattle grazing and <b>no</b> summer sheep (ie from May to August inclusive). Rabbit control may be necessary
3) Scrub patches/ actively managed scrub	Retention of scattered scrub on downland or scrub management on rotation to create a range of scrub patch sizes and ages

The project is only able to target new HLS agreements that have been or are currently being agreed since the project started in 2012. By comparing the NE pipeline list of planned farm and landholdings that are due to come under agreement we have been able to cross-reference this with our comprehensive *Butterflies for the New Millennium* database to produce a list of target farm holdings where one or more of the seven species are present or where habitat may potentially still exist as the species recently became extinct. Around 150 sites are being targeted and we are working with NE advisors across the country and, where we have regional staff, much of this advisory work is being delivered through the relevant BC Regional Officer.

The project will continue to run in 2013/14 during which time the current Higher Level and Entry Level Schemes will cease.

Contributed by Dr Caroline Bulman, Senior Species Ecologist, [cbulman@butterfly-conservation.org](mailto:cbulman@butterfly-conservation.org)

## 4 Butterfly Conservation Country and Regional Updates

### 4.1 Butterfly Conservation in Scotland

We now have over 1300 members, and our autumn Member's Days and spring Recorders' Gatherings are ever-popular, with well over 100 attendees at each. Our Members' Days are a celebration of the past year's achievements and a social occasion, especially for new members to meet long-term members.

The Recorders Gathering is open to anyone interested in butterfly and moth recording, and here we look at the previous years' highlights, relevant research that uses our data, and discuss species that need extra effort.



We now have good coverage of Scotland with our regional ID leaflets, which encourage the public to start recording. They are free, and distributed in visitor centres, museums etc, and feature the butterflies and usually a few of the day-flying moths in the region. We are due to reprint the Stirling, Clacks and Loch Lomond ID leaflet this year.

Our 'postcard surveys' for the general public remain useful and popular, and in 2013 we will be focussing on Speckled Wood, with on-line recording this year for the first time.

We are continuing to develop projects on the Central Belt peatlands. Work at our Wester Moss reserve near Stirling received a nice boost with some unexpected and short-notice funding from Scottish Natural Heritage through the Scottish Government's 'Green Stimulus fund'. Volunteers and contractors have now completed the removal of birch *Betula* from 1.5ha of the SSSI to significantly increase the area of open bog on the site. Other work parties through the year have added yet more dams, while two-thirds of the remainder of the bog has had its birch dealt with by contractors carefully using the 'glove of death' method of applying herbicide. Now that the bog is much wetter, we believe that in future this will stop the return of the birch and pine *Pinus*.



All of this work is hugely dependent on our members and volunteers, who not only carry out the basic recording work that underpins it, but also contribute their time and money to help keep Butterfly Conservation Scotland growing.

Contributed by Paul Kirkland, Director, Scotland, [pkirkland@butterfly-conservation.org](mailto:pkirkland@butterfly-conservation.org)

#### 4.1.1 Priority Species work in Scotland

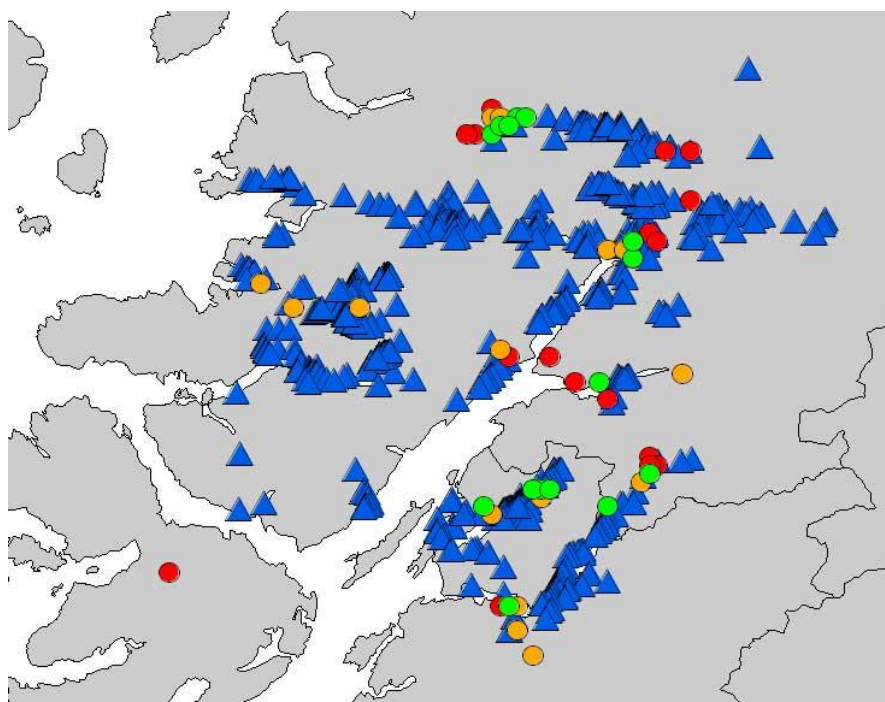
Butterfly Conservation Scotland (BCS) has continued to work closely with Forestry Commission Scotland (FCS), both on and off the National Forest Estate (NFE). FCS recognise the role that they can play in spear-heading conservation action towards our two most threatened woodland butterflies, **Pearl-bordered Fritillary** *Boloria euphrosyne* and **Chequered Skipper** *Carterocephalus palaemon*, through their inclusion as high priority species in their Scottish Forestry Strategy.

One of the fundamental questions that we have been unable to answer is how these two butterflies are faring in Scotland. This is because an insufficient number of colonies are monitored each year. However, last year we were able to help FCS target monitoring to both butterflies on the NFE by using a combination of contractors and volunteers. Despite the poor weather, monitoring, via timed counts and single species transects, was undertaken at over thirty sites for Pearl-bordered Fritillary and almost twenty for Chequered Skipper. The results are still being collated but we are hopeful, despite the poor weather, that sufficient data has been collected for a Scottish index to be calculated and hope that similar coverage will continue in 2013.

In addition, BCS also launched a Chequered Skipper survey in 2012 as we believe the butterfly is under-recorded in Scotland. This is based on research undertaken by Dr Stuart Ball from JNCC (Joint Nature Conservation Committee). He devised a statistical model to identify areas that support highly suitable habitat. This predicted that the distribution of Chequered Skipper may be

underestimated by around 20% at a 10km square resolution and possibly by as much as 400% at a 1km scale! The key factors in his model were climatic, particularly rainfall but also altitude, woodland cover, rough grassland and a southerly aspect. The aim of the survey was, therefore, to target recording to the top 100 1km squares that Stuart predicted to be the most suitable for the butterfly, but where it had not previously been recorded. Details of the survey, including survey forms, methodology and maps, showing the location of each of the one hundred 1km squares were all available on our website.

Despite the poor weather the survey sparked a good deal of interest with over 50 volunteers signing up to take part. This resulted in 49 survey visits to squares although this includes repeat visits by different surveyors to some squares. 36 different squares, out of the 100 targeted, were surveyed with Chequered Skipper being found in 15 of these, but not found in 21. The main reason for the butterfly not being recorded in these squares was due to them being surveyed in marginal weather, rather than the butterfly being absent. Chequered Skipper was also recorded in an additional 15 new 1km squares, where it had not previously been recorded, although these squares were not part of the targeted 100 squares. The location of these squares is plotted on the map below



### Key

Blue Triangles = CS records 1980-2011.

Green Dots = Targeted 1km squares where CS was found.

Red Dots = Targeted 1km squares surveyed but CS was not found.

Orange Dots = Other new 1km squares where CS was recorded.

NB: Three 1km squares in Cowal, all red dots, which lie c30km to the south of the map are not shown.

As the map clearly shows all the records are from within, or adjacent to, the current known range of the butterfly with the most significant records of Chequered Skipper being:

- The most southerly Scottish sighting, in Glen Nant.
- A record immediately to the east of Kinlochleven which is around 7km to the east of the closest previous record.
- The discovery of a good population in seven 1km squares at the western end of Loch Arkaig, on the north-western edge of the butterfly's range.

BCS would like to thank everyone who took part in the survey. Due to the success of and interest in the survey we will be repeating it again next year, with our fingers very strongly crossed for some

better weather. For more information please visit [www.butterfly-conservation.org/chequeredskipper](http://www.butterfly-conservation.org/chequeredskipper) and/or contact Tom Prescott for more info. Email: [tprescott@butterfly-conservation.org](mailto:tprescott@butterfly-conservation.org). Tel 01540 661469

## 4.2 Butterfly Conservation in Northern Ireland

2012/13 is the 2<sup>nd</sup> year of our Northern Ireland Environment Agency (NIEA) funded project 'Butterflies Mean Biodiversity' in Northern Ireland. This project works with various partners including Agencies, NGOs, Landscape Partnerships, Biodiversity Officers and the local branch. The main aim of the project is to increase engagement in conserving butterflies and moths through building capacity in the branch, local organisation and the general public.

2012 was a particularly frustrating year to be working on butterflies and moths in Northern Ireland with almost all surveys being postponed or cancelled due to inclement weather. However, despite there being hardly any butterflies, we have seen a steady increase in support for BCNI. We saw an increase in participation in the Big Butterfly Count, bucking the UK wide trend, potentially due to the Local Biodiversity Action Forum who received HLF funding to encourage biological recording throughout Northern Ireland, and butterflies being one of the main groups that was promoted. Participation in Branch Talks over the winter period is at a historically high level, with 40-50 people now being the norm whereas in the past we struggled to reach double figures. We have also maintained a membership of just about 200 individuals, the highest level in the Branch's history.

### Projects

'*Saving Magnificent Meadows*' in partnership with the NIEA, the Department for Agriculture and Rural Development (DARD), the Ulster Wildlife Trust (UWT) and local biodiversity officers, is a UK wide project spearheaded through Plantlife. Our project in NI is one of several across the country. We received Stage I development funding, developing both an audience participation strategy and an inventory of potential sites for engagement throughout the target area of Fermanagh and South Tyrone. If successful at Stage II, we will be able to employ a full time member of staff throughout the project area who will explore the various issues currently inhibiting good grassland conservation leading to a more practical based LIFE or INTERREG bid in the future. Target species that will benefit from this project include; **Marsh Fritillary** *Euphydryas aurinia*, **Narrow-bordered Bee Hawk-moth**, **Dingy Skipper** *Erynnis tages*, **Cryptic Wood White** *Leptidea juvernica* and **Small Blue** *Cupido minimus*.

BCNI have worked with the *Carntogher Community Association's Envision Project* in County Derry/Londonderry. Carntogher is an Irish speaking area where we are working with the local Gaeilge speakers to develop vernacular moth and butterfly names in Irish, as well as raising awareness and participation in recording and monitoring. This area has no history of recording or of recorders and through engaging through the language we are able to increase interest and involvement in butterflies and moths in an otherwise hard to reach group. Envision is championing the **Large Heath** *Coenonympha tullia* with local volunteers surveying local bog sites for the foodplant and turning up several new sites for this species.

NIEA have funded an extensive survey into **Marsh Fritillary** across Fermanagh and South Tyrone which has turned up a suite of new sites and highlighted the importance of under explored areas such as Slieve Beagh and Bin Mountain for invertebrates, especially those associated with Scabious rich habitats. This is particularly important in 2012 due to the low Marsh Fritillary numbers throughout the region; these new sites are obviously important core sites which can maintain the species even in very 'bad' years. The **Grayling** *Hipparchia semele* has been championed by several organisations with a new timed species count at Cave Hill in the Belfast Hills, a transect at The Giant's Causeway and new interpretation through the *Action for Biodiversity Project* at Sheeplands.

2012 was also hailed as 'Year of the Micro-moth' with funding provided through NIEA for increased targeted recording and verification of specimens. More micro-moth records were added to the database in 2012 than in any previous year with 22 species being new to Northern Ireland and two of these also being new to Ireland.

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### 4.3 Butterfly Conservation in Wales

Butterfly Conservation Wales (BCW) continues to focus effort on a range of priority Lepidoptera. In addition to the species mentioned below and elsewhere, survey work has continued on **Large Heath** on the Denbigh Moors in North Wales, where several new sites were discovered in 2012.

One of the main outcomes in 2012 was the completion in March of the three-year Tir Gofal Monitoring Contract. This investigated the impact of the previous Welsh agri-environment scheme on **Marsh Fritillary**, **Small Pearl-bordered Fritillary** *Boloria selene* and **Brown Hairstreak** *Thecla betulae*, as well as a range of vertebrate and plant taxa. Publication of the final report by Welsh Government is still awaited. We have also continued to provide advice and training on the current Glastir agri-environment scheme including species advice under the woodland management element.

The **Welsh Clearwing** *Synanthedon scoliaeformis* was the focus of a student project. Rhiannon Bevan from University of Swansea sampled trees in three key areas; Elan Valley, Lake Vyrnwy and Cannock Chase. Her results confirm much that was already known about the moth's requirements but also indicated that the moth may require birch trees growing in more open conditions at higher altitude.

Our partnership agreement with Forestry Commission Wales (FCW) continued in 2012. Scrub management at Pembrey Forest, on the Carmarthenshire coast, is continuing thanks to our work with FCW and TCV. Remnant sand dunes and rides within the forest support nationally important populations of **Small Blue** and **Grizzled Skipper** *Pyrus malvae*. Scrub removal is helping to maintain the forest distributions of these species.

Scrub removal from a former quarry within Slade Wood, Monmouthshire, continued in 2012, and foodplants of Grizzled Skipper, **Dingy Skipper** *Erynnis tages* and **Drab Looper** *Minoa murinata* are recolonising the area. The scarce micro-moth **Eucosma aspidiscana** was recorded new to Wales from the quarry in 2012. At Hendre Woods, near Monmouth, over 1km of trackside habitat was managed over the previous winter, to increase suitability for the Drab Looper and enable it to disperse into new habitat patches. A management plan has been drawn up to help prioritise further ride and scrub management for the moth between now and 2015.

At Clocaenog Forest in Denbighshire, extensive scrub clearance has been undertaken alongside watercourses to maintain habitat suitability for Small Pearl-bordered Fritillary and to increase connectivity across the network of nearly 40 breeding sites. Long-term species monitoring has highlighted positive site-level responses to the habitat management. Annual scrub clearance at Harlech Forest on the Merionethshire coast also continued in 2012. This is the only Dingy Skipper site in the county and management has allowed the species to colonise tracks and rides which were previously unsuitable for it.

Russel Hobson, Head of Conservation Wales, rhobson@butterfly-conservation.org and George Tordoff, Conservation Officer, gtordoff@butterfly-conservation.org

### 4.4 Butterfly Conservation in the West Midlands

In early 2012 the *Midlands Fritillaries Project* (which targeted eight key West Midlands landscapes plus the Forest of Dean in the South and employed two part time members of staff) came to an end and the Senior Regional Officer's work became increasingly focussed on project work in the Wyre Forest and on Forestry Commission (FC) sites across the region.

Thanks to Forestry Commission England (FCE) funding, the regional officer has again been active (together with support from the local BC branches) developing collaborative landscape projects to help deliver the joint *Lepidoptera on Forestry Commission Land in England Conservation Strategy 2007-2017*. The project to conserve the **Wood White** *Leptidea sinapis* in South Shropshire has continued (see section 4.4.2). The project work at Oversley Wood in Warwickshire led by FCE focussed on Aspen *Populus tremula* feeding invertebrates, including two UK Biodiversity Action Plan (BAP) micro-moths is now well into its final year, and a new FCE led 'Linking the Pearls in the Dean' project has started in the Forest of Dean. This focuses work on the **Small Pearl-bordered Fritillary** and is a legacy to the collaborative work achieved through the *Midlands Fritillary Project*. The project

has started to implement an extensive programme of landscape-scale woodland management. In the first six months the priorities have been surveying the condition of 10.5kms of ride edges, collecting and growing on Marsh Violet *Viola palustris* for replanting next spring, and beginning the contracts and volunteer tasks to clear scrub, re-coppice and widen rides to link the three surviving Small Pearl-bordered fritillary colonies in the Dean.

The Mortimer Forest on the Shropshire/Herefordshire border has also started to receive more attention with an '*Into the Woods*' project proposal developed which is aimed at engaging people from the local community in wildlife recording and practical volunteering. An aim for 2013 is to try to encourage much more survey and recording effort to be targeted at both the Mortimer Forest and other nearby Forestry Commission woods partly to assess the current status of Wood White and help to identify which sites could be involved in a re-introduction project.

The Regional Officer has also contributed to the Stiperstones & Corndon Hill Landscape Partnership Scheme (which has now submitted a Stage 2 application to HLF) by attending the Natural Heritage Special Advisory Group and contributing to the development of a project 'Rescuing rocks and overgrown relics'. If successful, this project will focus on improving habitats at a number of south Shropshire sites which support **Grayling** (including Bog Mine, Roman Gravels, Snailbeach Mine and Earl's Hill) as well as on important connecting sites.

BC has continued to play a key role in the Wyre Forest area by sitting on the Legacy Working Group and more recently by accepting places on the new Wyre Forest Landscape Partnership board and the Land Management Working Group. These groups will be working closely with the Strategic Development Manager with the aim of producing a strategic management plan for the whole area which will involve Natural England (NE) and FC working together more closely than they have ever done before. Our new *Reconnecting the Wyre* project which builds on *Back to Orange*, which ran in the Wyre Forest from 2007-2010, is now also well underway (see section 4.4.1).

Work in the region continues to receive good publicity via the local media including newspapers and local radio. There has been continuing coverage of project work in *The Comma*, regional magazine of the local West Midlands branch and also the newsletter of Warwickshire branch.

The Warwickshire and West Midlands branches continue to focus their efforts on practical conservation work, targeting sites where the most important species occur (e.g. Grafton Wood in Worcestershire, Ewyas Harold Common in Herefordshire and Ryton Wood in Warwickshire). In addition to this they are also involved in a number of landscape projects such as 'Bringing back the Small Blue' in Warwickshire and 'Hedgerows for Hairstreaks' in the Forest of Feckenham area of Worcestershire which focuses on the **Brown Hairstreak**. Both branches also run regular events and training days and are actively involved in ongoing survey and monitoring projects such as BC's *Wider Countryside Butterfly Survey*.

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#### 4.4.1 Reconnecting the Wyre

The **Pearl-bordered Fritillary** is one of the fastest declining butterflies in the UK, having suffered a 61% distribution loss between 1970-82 and 1995-2004 and a 66% decline in abundance between 1977 and 2004. These losses are ongoing, with the most recent analysis showing a distribution loss of 43% and a 42% decline in abundance between 1995-1999 and 2005-09 (Fox *et al.*, 2011).

It is clear that the Wyre Forest is now a key national stronghold for the Pearl-bordered Fritillary as a result of the various management practices that are being employed here. These include coppicing, PAWS restoration work and creation of areas of permanent open space (managed in a variety of ways such as by mowing, annual cut and collect programmes, annual July Bracken rolling, grazing or gradual enlargement) and the creation and maintenance of wide rides and tracks. There is also no doubt that the *Back to Orange* project work carried out here from 2007-2010 was extremely successful in its main aim of helping to conserve the fritillaries of the Wyre Forest. Pearl-bordered Fritillary moved into 13 new areas and there were large increases in numbers on at least five other established sites (Joy, 2012).

The *Reconnecting the Wyre Project* follows on from these previous successes and will carry out a landscape-scale, targeted programme of coppice restoration and ride management in lowland mixed deciduous woodland within the Wyre Forest. The aims of the project are: a) to restore economically viable coppice which will provide sustainable breeding habitat for the butterfly, b) to improve connectivity across the forest thus increasing the chances of natural recolonisation of new habitat as it becomes available, and c) to continue to enlarge the volunteer network so that it can continue to undertake maintenance management and monitoring under the supervision of the West Midlands BC branch both during and after the project. The land management outcomes are anticipated to be 45.3ha of restored and better connected habitat with the work consisting of coppice restoration, ride widening, scrub clearance, conifer felling, culverting and stump grinding. Initially the project focussed on continuing to ensure BC was well represented on the legacy work from *Grow with Wyre* as well as encouraging volunteers to undertake further survey work in summer 2012 following on from the successes of 2011.

2011 had been a particularly notable year for the Pearl-bordered Fritillary in the Wyre Forest. Exceptional numbers were recorded on many of the sites monitored by timed counts, it was widely distributed in many parts of the forest and was recorded on a number of new sites. This is reflected in the number of Medium (n=3) and Large (n=11) sized colonies recorded on timed count sites which was much higher than any year since 2002. The exceptional year of 2011 was also reflected in the transect results. All three transects in the main block recorded significantly more Pearl-bordered Fritillaries than in any other year since 2001 with the annual indices for the Wyre Forest East and Wyre Forest West both being above 180. Overall the population index for the Wyre Forest between 2002 and 2011 increased by 113% in comparison to a non-significant trend across the whole UK during the same period (see Joy, 2012, Joy & Ellis, 2012).

In 2012, volunteer activities in the area have continued to increase with the support of BC's West Midlands branch and again over 20 recorders were involved in the survey for Pearl-bordered Fritillary alone. Despite the poor weather, Pearl-bordered Fritillary numbers held up well on both the sites monitored by timed counts and on the transects where the numbers on the Wyre Forest East and Wyre Forest West dropped from their all time highs in 2011 but were still higher than for any year since 2001. The Pearl-bordered Fritillary was also recorded on 17 new sites in 2012 which is a clear indication that it is now dispersing well in certain parts of the Forest. This included a site to the east of the River Severn which was the first report of Pearl-bordered Fritillaries on that side of the river since 1999. A new butterfly trail was launched in May which passes through several of the areas managed as part of the earlier *Back to Orange* project and gives BC its first visible presence at the Wyre Forest. Our project work here has continued to receive good publicity in the local media.

The land management part of this new project commenced in autumn 2012 with a programme of coppice re-spacing and scrub removal which has involved contractors and volunteer work parties. The first re-spacing plot was completed in October with a further ten sites due for completion by April 2013. Stump grinding work is due to take place on four sites in the next few months as is some further conifer removal work. In addition to this, FCE and NE are both continuing to take opportunities to create more wide rides and linking corridors. Closer partnership working is also taking place and there is now increasing awareness of other sites in the wider area which have the potential to support our key species. Eight BC work parties will take place over the winter months mainly undertaking ride work in key areas but also assisting with some of the re-spacing work.

The appointment of a new Strategic Development Manager for Wyre, which is a joint appointment between FC and NE, and the decision to produce a joined-up management plan for the whole Forest should offer many new opportunities to create and maintain Pearl-bordered Fritillary habitat in what is now one of the premier sites for the species in England.

**Acknowledgements:** *The Reconnecting the Wyre Project* has been funded by SITA Trust. This project would not be running so effectively without the full support of the FCE (Richard Boles and Phil Rudlin) and NE (Saul Herbert) to whom we are very grateful.

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#### **4.4.2 Conserving the Wood White Butterfly in the South Shropshire Woods Project**

From 2010 to 2012, by working in partnership with FC, a significant programme of work was undertaken in eight woods between Clun and Craven Arms in South Shropshire as the area is part of a regional stronghold for Wood White. The aim of the project was to improve available habitat for the butterfly through undertaking management work, while also seeking to improve linkages between woods in order to encourage dispersal of the butterfly at a landscape level.

The work undertaken covered an area of 46ha with ride work being the dominant feature (40ha of the project work) although a series of trial scrapes were created on two sites (4.5ha) and volunteer work parties took place on three sites to create additional clearings and scallops. Initial vegetation and population surveys helped determine the best locations for management work to take place and a repeat survey was undertaken at the end of the project to assess the impact of work on the distribution of key larval foodplants and the butterfly. The repeat of the vegetation survey clearly showed the success of the project work with 74% of the ride and track edges managed already supporting more Wood White habitat. The creation of scrapes also initially appears to have been successful but further monitoring of both the ride sides and scrapes is essential to see how long these benefits are sustained. The vegetation monitoring work also identified that a volunteer work party had inadvertently created potential Wood White habitat on the brash pile which was due for removal or breaking up. This brash provided an ideal germination ground for Greater Bird's-foot Trefoil *Lotus pedunculatus*.

The vegetation survey results together with the survey and monitoring results were used to produce management and monitoring recommendations on a site by site basis. There is no doubt that the ride management system already initiated on three of the sites by FC has been a great success. A key component of the management recommendations are therefore to extend this management system to more rides on key sites.

Transects were continued on the three sites which were known to support Wood White and this monitoring continued in summer 2012. Nineteen other sites were surveyed for Wood White during the course of the project. Many of these sites had held populations of the Wood White in the early 2000's and, with the exception of the Mortimer Forest, it was disappointing to find that these colonies were no longer extant. This fact does, however, serve to highlight that declines are continuing at a regional level and to reinforce the importance of sustaining and safeguarding remaining populations.

Three of the sites included in the project work are now thought to contain sufficient suitable habitat to support a population of the Wood White. For this reason, re-introductions should be considered on these sites in the near future. BC are keen to develop a Wood White re-introduction project early in 2013 where south Shropshire and north Herefordshire could be two of the main focus areas.

This project could not have been achieved without the support of local volunteers. Continued local volunteer effort will be essential to ensure that these sites maintain a high profile for their conservation interest, to contribute to the ongoing management effort, and to continue to monitor the long term effects of the project work. This project was funded by SITA Trust until March 2012 with the subsequent work delivered through our close working with FCE.

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## 4.5 Butterfly Conservation in Northern England

BC currently employs three staff in the region headed by Dr. Dave Wainwright, Regional Officer. Martin Wain combines roles of Woodland Advisor within the Morecambe Bay Natural Improvement Area (NIA) with that of Project Officer overseeing the management of woodland sites (funded by SITA). Graham Jones' roles include development of a volunteer task force (funded by HLF), management of sites using contractors and supervision of a captive breeding and reintroduction programme for **Pearl-bordered Fritillary** (funded by Co-op). Although the Regional Officer continues to represent BC across the region, work continues to focus mainly on the *Morecambe Bay Limestones* and the *North York Moors Dukes and Pearls* projects.

BC currently co-ordinates the **High Brown Fritillary** Action Group encompassing sites in south Cumbria and north Lancashire, transect recorder groups in the North York Moors and Morecambe Bay areas and sits on the Cumbria **Marsh Fritillary** Action Group, Durham **Small Pearl-bordered Fritillary** steering group and **Netted Carpet** *Eustroma reticulatum* steering group.

In County Durham, the Regional Officer continues to provide advice to owners of sites that support populations of the Small Pearl-bordered Fritillary in the Durham Coalfield Pennine Fringe and to organisations involved in their management. BC initiated management of these sites in 2002. Monitoring is now largely undertaken by staff from other organisations and volunteers. Two of the remaining six colonies are monitored by transect; counts in 2012 were good despite poor weather. Evidence suggests that control of grazing pressure on streamside damp grassland/wet flush habitats is the key to the conservation of this species in County Durham. Further fencing has been installed at sites identified as potentially capable of supporting the species. Attempts to create habitat through planting violet *Viola* spp. plug plants also appear to be successful. In summary the habitat resource for this species in County Durham has been tripled by management since 2002 and by five-fold when previously unrecorded habitat is included. BC is currently advising Durham Wildlife Trust on best practice for establishing populations at further sites.

In Cumbria the Marsh Fritillary re-introduction programme continues. The species has now been reintroduced to eight sites. Populations on all four original sites survive and, although web counts suggest a decrease since 2011, none appears to be under any immediate threat of extinction (indeed, one of the founder populations experienced a substantial increase). Work to improve habitat condition on these and other sites continues as does the captive breeding programme, the aim being to reintroduce the species to further sites in order to develop sustainable population networks. The possibility of introducing fresh genetic material into captive strains is being examined, as breeding success was curtailed considerably in 2012. The breeding programme is undertaken mainly by volunteers.

The Regional Officer also advises on the Netted Carpet in Cumbria and the **Dark Bordered Beauty** *Epione vespertaria* in North Yorkshire. Extensive surveys of Stensall Common, the English home of the Dark-bordered Beauty were undertaken in 2012 and BC staff assisted with monitoring of Netted Carpet in Cumbria and Lancashire. The Regional Officer also co-ordinates the collation of butterfly transect data from the Morecambe Bay and North York Moors areas and issues High Brown Fritillary netting licences to recorders on behalf of NE. Additionally, the regional office deals annually with a number of planning issues especially on the Cumbrian coast (relating to **Small Blue**, **Dingy Skipper** and **Grayling** sites) and in County Durham and Tees Valley (Dingy Skipper, Grayling). An increasing amount of staff time is being devoted to assisting NE advisors in the preparation of HLS applications for sites supporting, or capable of supporting, key Lepidoptera.

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### 4.5.1 Conserving the Pearl-bordered Fritillary Project

This project ensures that many of the woodlands around Morecambe Bay continue to receive management following expiry of funding provided by GrantScape. Over the last five years, more than 30 woodlands have been managed through ride widening, ride creation, felling and coppicing. The bulk of this work has been undertaken by contractors but volunteers continue to perform a significant role in terms of assisting with management and with monitoring the butterfly populations of these woodlands. The volunteer contribution to these projects now easily exceeds 1000 days and



continues to increase on a weekly basis.

### **Building a Butterfly Task Force**

Graham Jones is tasked with further development of our existing volunteer team and the recruitment of new members. The task force will continue to undertake management, monitoring and surveys. Volunteers are now being provided with training such as first aid, use of brushcutters and chainsaws and will in due course be trained to assist with surveying for species such as **Pearl-bordered Fritillary**, **Duke of Burgundy** and **Anania funebris**. Our current winter work programme comprises an average of 2-3 volunteer tasks per week.

### **Morecambe Bay Nature Improvement Area**

Martin Wain holds the post of Woodlands Advisor within the NIA. Key elements of his role are to liaise with woodland owners, promote the FC grants schemes, prepare woodland management plans and, when needed to prepare and submit grant applications on behalf of woodland owners. Martin also seeks to promote woodfuel initiatives and develop butterfly tourism and volunteering opportunities wherever they arise. The partnership with FC continues to deliver important conservation benefits within the Morecambe Bay area.

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### **4.5.2 Conserving North York Moors Limestone Grassland for Dukes and Pearls Project**

The lowland calcareous grasslands located along the southern edge of the North York Moors represent one of the most important areas for Lepidoptera in northern England, supporting nationally important populations of the **Duke of Burgundy** and **Pearl-bordered Fritillary**. The *Conserving North York Moors Limestone Grassland for Dukes and Pearls Project* is implementing a programme of landscape-scale limestone grassland habitat restoration on 32 sites, identified through the *Fit for a Duke* feasibility study undertaken in 2008-09. Management includes scrub control, vegetation cutting, Bracken *Pteridium aquilinum* and bramble *Rubus fruticosus* agg. management, coppicing, ride widening, mowing, *Primula* planting and violet *Viola* sp. seeding. A total of twenty-one sites have now been managed. A (re)-introduction programme for Duke of Burgundy is planned on some restored sites where natural colonisation in the short to medium term is unlikely.

Monitoring of extant, extinct and potential Duke of Burgundy and Pearl-bordered Fritillary sites continued in 2012. Pearl-bordered Fritillary now occupies four sites (two were occupied at the commencement of this project). Duke of Burgundy was found on one new site and one at which it had not been seen since 2000, although it was not found at two sites where it had been seen in 2011. The project is principally funded by WREN.

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### **4.6 Butterfly Conservation in Eastern England**

It was a year of transition in the East of England as two long running projects came to an end and new projects have started. Although the Regional Officer continues to represent BC across the region, in 2012 work was almost entirely focused on three projects; the *Norfolk Brecks Heathland Restoration for Threatened Butterflies and Moths* which ended in December, *Managing Elms for the White-spotted Pinion in Cambridgeshire* project which finished in May and the *Northants Wood White Project* which started in July 2012. Preparations were successful for a new *Ipswich Heaths project for Silver-studded Blue* to start in January 2013.

At the Devil's Dyke near Newmarket in Suffolk the butterfly transect continued in 2012 for its tenth year with a stable **Dingy Skipper** population and a fabulous year for **Chalkhill Blue** *Lysandra coridon* with a high count of 1758. The site is now in HLS with volunteers from BC's Cambridgeshire and Essex branch providing extra conservation effort directed at both priority species.

The Regional Conservation Day was held on 21 April 2012 at Mundford Village Hall and attended by 11 volunteers from five BC branches in the Eastern Region. The event included a field trip to

Hockwold and Weeting Heath to view the soil inversion work but will probably be best remembered for the torrential rain.

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#### 4.6.1 Norfolk Brecks Heathland Restoration for Threatened Butterflies and Moths Project

The Norfolk Brecks Heathland project focuses on restoring heathland habitat on 15 Norfolk Breckland sites to benefit a wide suite of threatened moths, as well as some butterflies. This £220k project is principally funded by WREN. It started in January 2010 and finished in December 2012. The principal objective of practical management is ground disturbance (scarification, rotovation and turf stripping) but on some sites scrub and bracken management is also undertaken. Over half the sites are FCE woodlands where rides have been targeted to increase the area of heathland but also improve connectivity.

Practical projects with contractors have been completed at 15 separate sites and included both large scale and small scale projects in 2012. At Cranwich Camp four new turf stripped plots were created to build on the success of those dug in 2011. At Brettenham Heath, Cranwich Heath, Methwold Rides and Cranwich Ride 58, 11 large rotovated plots were completed building on known positive results for **Lunar Yellow Underwing** *Noctua orbona*, **Basil-thyme Case-bearer** *Coleophora tricolor*, **Forester** *Adscita stances* and **Grey Carpet** *Lithostege griseata*. At East Harling Heath scrub clearance work was targeted at restoring old pits and sheltered corners to improve habitat for **Grizzled Skipper**. Scrub was cleared at Cranwich Camp and also at West Tofts Pit to expose south facing banks of bare soil for Dingy Skipper which is known to occur at both sites. Along forest rides just south of Thetford two new terraced pits have been created for Dingy Skipper which is present in a forest re-stock plot nearby. Tree clearance was completed at one large site to reduce shading and competition for a large area of privet known to support **Barred Tooth-striped** *Trichopteryx polycommata* which was found in early 2012. BC worked in partnership with Plantlife to complete an ambitious deep ploughing (soil inversion) project at Hockwold and East Harling resulting in 3 plots covering 23 hectares on former forestry land. Several events have been organised in conjunction with volunteers to ensure monitoring continues in 2013.



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#### 4.6.2 Managing elms for the White-spotted Pinion in the Cambridgeshire Fens

A large area of Cambridgeshire is the national stronghold for the **White-spotted Pinion** *Cosmia diffinis*. There is evidence of Dutch Elm Disease across Cambridgeshire and Huntingdonshire but many old stands of trees remain unaffected. This £55k project is principally funded by SITA Trust

and aims to halt and reverse the decline of the moth through a programme of habitat management on 29 locations around Huntingdon and Cambridge, at the centre of the moth's UK distribution. This project started in June 2010 and finished in May 2012 although volunteers continued recording the adult during the August/September flight season.

The second year of the White-spotted Pinion project saw further elm trees planted at several different locations including a 150metre boundary near Knapwell. Elm trees have been sourced as suckers from existing elm stands and micro propagated trees, both sourced from trees that appear to be resistant to Dutch Elm Disease to date. Most planted trees of either type have grown vigorously although some suffered in the spring drought.

Survey visits for White-spotted Pinion larvae at five different sites were all negative in 2012. However, **Lesser-spotted Pinion** *Cosmia affinis* larvae were recorded feeding on leaves in the tree guards of elm planted in 2010/11. Adult White-spotted Pinion were generally 10 days later than recent years and not seen until mid August. There was a good distribution of records across Cambridgeshire in 2012 at known sites and new sites, some of which were predicted due to the presence of old elm trees.

#### **4.6.3 Conserving the Wood White Butterfly in Northamptonshire's Woodlands**

A new three year project funded by SITA Trust with £113,000 and working in close partnership with FC and local volunteers started in July 2012. This project will carry out a landscape-scale, targeted programme of practical conservation management to maintain and restore habitat for the Wood White in one of its few remaining strongholds - the Yardley-Whittlewood Ridge landscape of Northamptonshire. Working in six woods the project will 1) maintain and strengthen existing populations and 2) encourage re-colonisations of former sites within the landscape. Wood White was confirmed at all six woods in the project area in 2012 and although the highest count was 41 at Sywell Wood, the lowest was just two at Whitfield Wood.

Contractors completed ride clearance along 800m at two locations at Bucknell Wood and 400m at Sywell to open up very overgrown rides and link Wood White colonies. All cut material was either stacked for charcoal, chipped or burnt. Contracts have been agreed for work at Hazleborough North, Hazelborough South, Whitfield Wood and Yardley Chase to include wide ridening, scalloping and creation of box junctions in 2013.

#### **4.6.4 Restoring the Ipswich Heaths**

This project aims to undertake landscape scale restoration of heathland sites on the eastern fringe of Ipswich to secure the remaining **Silver-studded Blue** *Plebejus argus* butterfly populations. Funding was secured from Wren for £116,526 to implement a four year project to restore remaining heathland sites on the eastern fringe of Ipswich. This project will start in 2013 and implement a programme of landscape-scale lowland heath restoration on 11 ecologically linked sites on the eastern fringes of Ipswich. The Ipswich Heaths were once part of a continuous band of heathland which stretched eastwards towards the coast at Lowestoft. The heathland habitat close to Ipswich is now much reduced and fragmented by new housing, industrial and recreational pressures combined with a lack of conservation management this has had a devastating impact on the number of butterflies and moths found. As recently as the 1980s at one of the proposed project sites, Purdis Heath, over 2000 Silver-studded Blue were regularly counted, tragically the count for 2011 was just 14. Management work will include clearance of trees and gorse scrub to enable heathland to re-establish and create mosaics of different age structures to provide shelter. At some sites restoration will include removal of bracken and gorse litter back to the mineral soil level to encourage heather regeneration from the seed bank, reduce soil compaction and encourage ants. The project will work very closely with local volunteers to implement this project.

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### **4.7 Butterfly Conservation in South West England**

BC's work in the region is supported by the following members of staff: Jenny Plackett, Project Officer, working on the *Two Moors Threatened Butterflies Project* on Dartmoor and Exmoor (see

section 4.8.1); Caroline Kelly, Conservation Officer, working on *Expanding the Large Blue in the Polden Hills and Conserving the Painswick Valley's Rare Butterflies* and Rachel Jones, Assistant Conservation Officer. Mark Parsons, Dr. Nigel Bourn and Dr Caroline Bulman, members of BC's national species team carry out much of their work on UK Biodiversity Action Plan and section 41 species butterflies and moths in the south west.

During 2012, BC's species team has worked directly on **Pearl-bordered Fritillary**, **Heath Fritillary**, **Large Blue**, **Marsh Fritillary**, **Lulworth Skipper**, **Adonis Blue** *Polyommatus bellargus*, **Duke of Burgundy**, **Small Pearl-bordered Fritillary**, **Silver-studded Blue**, *Eudarcia richardsoni*, **Dingy Mocha** *Cyclophora pendularia*, **Barberry Carpet** *Pareulype berberata*, **Narrow-bordered Bee Hawk-moth**, **Drab Looper**, **Light Crimson Underwing** *Catocala promissa*, **Silky Wave** *Idaea dilutaria*, **Forester**, *Agonopterix atomella*, *Grapholita pallifrontana*, **Argent & Sable** *Rheumaptera hastata*, **Shoulder-striped Clover** *Heliothis maritima*, **Chalk Carpet** *Scotopteryx bipunctaria*, **Speckled Footman** *Coscinia cribraria*, *Phyllonorycter scabiosella*, **Striped Lychnis** *Shargacucullia lychnitis* and **Scythris siccella** in the south west. See section 3.1 (moths) and 3.3 (butterflies) for information about the work carried out on these species.

*Saving Devon's Precious Pearls* project, involving FC sites is now coming to the end of its second year. *Expanding the Large Blue in the Polden Hills* funded by SITA and the BBC Wildlife Fund is also coming to the end of its second year. BC was successful in obtaining funding in October 2012 from Biffa Award for the *Conserving the Painswick Valley's Rare Butterflies* project. This project is funded for two years, ending September 2014 which aims to restore limestone grassland to support **Large Blue** and **Duke of Burgundy** butterflies and will help to re-establish functioning metapopulations of both species in the Painswick Valley. The project will address the major conservation challenge of managing habitat for two species at opposite ends of the successional spectrum of habitat in the same landscape.

#### 4.7.1 Two Moors Threatened Butterfly Project

The Two Moors Threatened Butterfly Project has been running since 2005 with the aim of reversing the declines in three UK BAP species; **Marsh Fritillary**, **High Brown Fritillary** and **Heath Fritillary**. The Project works at a landscape scale across Dartmoor and Exmoor, aiming to restore and re-connect areas of suitable habitat by working with farmers and landowners, providing help and advice in habitat management, sourcing funding for required management and organising practical works.

Since the Project began, 187 sites have been visited (107 on Dartmoor, 80 on Exmoor), advice provided on over 1800ha of land, and management delivered on more than 1350ha of habitat. This is a partnership project lead by BC with funding support from NE, Dartmoor and Exmoor National Park Authorities and the Environment Agency.

2013 will see the expiry of many Environmentally Sensitive Area funding agreements across Dartmoor and Exmoor. These agreements have offered financial incentives to support landowners in undertaking management to benefit wildlife, and have been replaced by HLS agreements. In 2012, significant effort has been put into supporting landowners and NE advisors in the preparation of new agreements to ensure that appropriate management options and 'indicators of success' are incorporated, and site-specific management plans have been produced where necessary. The HLS agreements are valid for 10 years and will secure appropriate management for target species in the longer term. A key agreement has been signed this year which incorporates habitat in the Dart Valley area which supports one of the most important High Brown Fritillary populations in the UK.

In Exmoor, the project continues to work closely with the National Trust (NT) to support on-going management in the Heddon Valley for High Brown Fritillary. Here, the project has been instrumental in helping to source funding to pay for management works, overseeing contractors and working with volunteers. This year, contractors have carried out a total of 13 days of Bracken management, cleared 3.6ha of scrub and undertaken 0.9ha of coppicing, to improve habitat condition across the network of occupied sites. A further 3ha scrub control is due to be carried out before March 2013. The project has also worked with private landowners, helping to secure funding through farmers' agri-environment agreements to carry out further scrub and bramble control, and involved volunteers in violet planting to increase the quality of breeding habitat.

During the last year, the project has visited 99 sites, resulting in management works being carried out on 40 sites (covering 33ha), conservation/ management plans being produced at 14 sites, and provision of management advice for a further 15 sites. 74 sites were monitored when weather conditions permitted.

Volunteer involvement remains a key element of the project, with 24 volunteer work tasks (280 volunteer days) spent on key butterfly sites across Dartmoor and Exmoor. The project was involved in two public events, which were attended by a total of around 600 people and ran three identification/monitoring training workshops involving a further 48 people.

Despite this effort, butterfly numbers were disappointing this year. Poor weather during the flight season resulted in limited opportunities to record butterflies, and although site visits were made to survey, very low numbers were recorded compared to recent years.

Contributed by Jenny Plackett, Two Moors Project Officer, [jplackett@butterfly-conservation.org](mailto:jplackett@butterfly-conservation.org)

#### **4.7.2 Saving Devon's Precious Pearls**

The *Two Moors Threatened Butterfly Project* is delivering a three year SITA funded project to improve and extend breeding habitat for the **Pearl-bordered Fritillary** on FC sites in the Haldon Forest district of Devon.

In the second year of management, 2.5ha of scrub control has been undertaken by contractors on two sites, and 0.5ha of clear-felling is due to be completed before March 2013. FC are supportive of the project, and are carrying out stump grinding on sites previously cleared of trees, and chemical control to reduce grassiness in core flight areas. Several joint volunteer tasks are planned with BC and FC volunteers for early 2013.

Planting of Common Dog-violet *Viola riviniana* plants has continued, with a further 1500 plug plants planted at Great Plantation in clear-felled areas, where the surface soil has been scraped aside. Two volunteer groups were involved in the planting, and volunteers also assisted with habitat surveys and butterfly monitoring.

Contributed by Jenny Plackett, Two Moors Project Officer, [jplackett@butterfly-conservation.org](mailto:jplackett@butterfly-conservation.org)

#### **4.7.3 Expanding the Large Blue in the Polden Hills**

This project started in June 2011, funded until March 2014 and aims to consolidate the Polden Hills network of Large Blue sites that support over 80% of the British population. The project aims to increase the area of suitable habitat by 64.5ha by carrying out landscape scale habitat restoration on a network of 14 sites in the Polden Hills. This will strengthen existing Large Blue populations and encourage new populations to recolonise sites beyond the main Poldens Ridge. Detailed habitat assessments, including ant surveys and food plant distribution, underpin the targeted management work and help to determine the advice, which is offered to landowners, regarding appropriate grazing regimes. Last year there has been a total of approximately 4ha of targeted scrub management conducted by contractors on nine sites. There is another 4ha of site management agreed to be completed before the end of March 2013 on the same nine sites and another 3ha planned for the final year of the project in the winter of 2013/14.

Last year one of the project sites was successful in obtaining an HLS agreement for scrub, hedgerow and grazing management. Our specialist contractor is continuing to work closely with NE examining the possibility of management options in sites entering or with the potential of entering an HLS agreement that will benefit Lepidoptera in other sites within the project area.

Wild Thyme planting was a major part of the project this year with a total of 5649 plants planted by volunteers (3879) and a contractor (1770) over 11 volunteer days and 13 contractor days across seven sites and taking at least 419 planting hours (not including contractor time). It has been a huge success and would not have been possible without the partnership working of both the NT and the Somerset Wildlife Trust volunteers working on each other's sites with the Langport Explorer and Scout group, BC Branch volunteers and local residents.

The volunteer development aspect of the project increased this year with the involvement of local people volunteering on sites nearest to them. This has included them attending conservation days, identification events and using their skills for casual and transect monitoring. Last year a new transect was established on a South Somerset District Council site and walked by a total of 6 local residents. Other sites that are owned by our other project partners NT, Somerset Wildlife Trust and Clarke Trust have a mix of transects walked as well as casual recording by their volunteers as well as the local BC Somerset branch volunteers. For example at the NT site at Collard Hill a Large Blue Warden annually undertakes the task of walking a daily transect and engaging with the high number of visitors that make their annual or first ever trip to see and record the Large Blue flying.

There have been a total of 15 events involving over 478 individuals (including BC and partner staff). Eight events presenting and introducing the project were designed for the public as well as target audiences to encourage involvement with the project, including monitoring. These were attended by at least 181 individuals with an audience of over 40 local residents at a few introductory evenings. Identification training days were held on three days on three different sites and attended by 60 individuals. One of those days was a huge success on Collard Hill with the students from Bridgwater College Crockers Horticultural campus who are helping to propagate the thyme for planting on sites to encourage the Large Blue to colonise.

Contributed by Caroline Kelly, Conservation Officer, ckelly@butterfly-conservation.org

#### 4.7.4 Conserving the Painswick Valley's Rare Butterflies

This two year project, which started in October 2012, aims to restore and improve habitat for both **Large Blue** and **Duke of Burgundy** across 11 sites. Scrub management of 5.3ha on nine sites has been planned to improve the condition of the important calcareous grassland habitat. The propagation and planting of 4000 Wild Thyme and 4000 *Primula* plants is planned for five sites and it is hoped to expand the breeding habitat for both butterflies. The targeting of the scrub management and the planting locations and sites will be determined from the habitat assessments on all 11 sites in the project area. Once suitable breeding habitat is established a re-introduction of Large Blue will be considered.

Habitat surveys have commenced including ant surveys and food plant assessments on seven sites. Targeted scrub management has already begun in the form of volunteer days which are being led by various partners or site managers. There have been seven volunteer days involving 69 volunteers conducting scrub management at four sites. Contractors have been selected for the three sites requiring more complex scrub management (approx. 2ha) and work will begin in January 2013.

*Primula* seed has been collected from three sites and delivered to two nurseries that are propagating them for the project. One nursery has reported successful germination and they will be planted in either spring or autumn this year.

Discussions with landowners, site managers and statutory organisations have been conducted to help draw up a priority list of the sites where introductions would be most likely to succeed and become sustainable. This will be progressed further during the spring.

Even though the project is in its early stages, the partnership with the project site managers Natural England, Gloucestershire Wildlife Trust, Upton and St Leonard local parish council and private landowners is strengthening and is hoped to continue into the future.

Contributed by Caroline Kelly, Conservation Officer, ckelly@butterfly-conservation.org

#### 4.7.5 Portland Limestone Grassland Restoration Project

The limestone grasslands of Portland, many of which have developed in former limestone quarries, are nationally important for their rare flora and fauna, including populations of ***Eudarcia richardsoni*** a UK endemic known only from Portland and one site on the Purbeck coast, as well as the distinctive form of the **Silver-studded Blue** *Plebejus argus* f. *cretaceous*. The grasslands owe their character

and richness to being sparsely vegetated but many areas are slowly being smothered by a blanket of non-native plants, including *Buddleia davidii* and particularly the sprawling *Cotoneaster integrifolius*.

The Portland Limestone Grassland Restoration Project is an initiative developed by the Portland Nature Conservation Forum, of which BC is a member, to tackle the problem of the highly invasive *Cotoneaster*. The project is being delivered by Dorset Wildlife Trust, thanks to a grant of over £800k from Viridor Credits (Landfill Communities Fund) through a programme of spraying, cutting and burning. This ambitious three-year project, which started in 2011, aims to restore over 200ha of limestone grassland habitat.

As part of the monitoring programme to assess the project's effectiveness, BC began assessing populations of *Eudarcia richardsoni* and monitoring a suite of limestone grassland butterflies and moths by timed counts. Target species for the timed counts included **Lulworth Skipper**, **Dingy Skipper**, **Small Blue**, Silver-studded Blue, **Chalkhill Blue**, **Adonis Blue**, **Grayling** and **Chalk Carpet**. In 2012 eight quarries were monitored, including BC's Broadcroft Quarry. Unsurprisingly populations of most species were badly affected by the weather, although good numbers of all species, except Lulworth Skipper and Adonis Blue, were recorded on at least some sites.

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## 5 Lepidoptera Recording Updates

### 5.1 National Moth Recording Scheme

The National Moth Recording Scheme (NMRS) continues to expand and now holds over 15 million moth records, two million more than this time last year. The 15 millionth record in the NMRS database was that of an **Early Thorn** *Selenia dentaria* recorded in Whitley Bay, Northumberland, on 16 March 2012 by T.C. Sexton. The efforts of the data contributors; County Moth Recorders, Record Collators, Local Record Centres and of course grass-roots moth recorders cannot go unrecognised, many thanks to all of you for supporting the NMRS and contributing to its success.

Since the NMRS dataset was updated on the National Biodiversity Network (NBN) Gateway in September 2012, we have received refreshed datasets from 27 vice-counties. The updated online distribution maps will be available via the Moths Count website ([www.mothscount.org](http://www.mothscount.org)) in due course. The NMRS data are being extensively viewed and used via the NBN Gateway. Since March 2012 the dataset has been accessed in excess of 100,000 times. This usage includes the production of 10km species maps, species lists per 10km square and all of the other 'interactive' facilities available.

Overall the density of records per 10km square in the NMRS database has increased. However, we still do not have any historical records (pre 2000) for Cornwall, Cumberland and Westmorland or Angus. Historical records are important to enable assessments of species distribution change within these areas. There is good coverage of records at 10km resolution from the year 2000 onwards, however, one-third of 10km squares have fewer than 100 records and 7% of squares are 'white holes' (no records at all), this could be due to under-recording or it could be because the County Moth Recorders have not submitted the records to us as yet. Looking at the number of species recorded per 10km square there are still some areas where more recording is required; 41% of the UK (1,251 10km squares) have only 1-100 species recorded within them. So, we are still some way off producing a full Atlas Great Britain and Ireland's larger moths, which is an aspiration of the moth recording community and ourselves.

The third National Moth Recorders' Meeting was held on January 26 2013. Despite the threat of snow it was another well attended day with 171 people through the doors. As with previous years the audience travelled from far and wide and consisted of moth recording beginners to County Moth Recorders', land managers', conservationists and researchers. The interesting talks were delivered from the amateur moth recording community, researchers and academics. We have received much positive feedback and we're already planning next year's meeting.

The National Moth Recording Scheme is funded by Butterfly Conservation, Natural Resources Wales (NRW), Forest Services, Forestry Commission England (FCE), Natural England (NE), Northern

Ireland Environment Agency (NEIA), The Redwing Trust, Royal Entomological Society and Scottish Natural Heritage (SNH).

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## 5.2 Moth Night 2012

After a break for 2011, the revamped Moth Night 2012, organised jointly by *Atropos* and BC, took place over 21–23 June. The emphasis was on moths on brownfield sites, with encouragement given to promoting public events. For the first time, a new online recording system was introduced to help streamline data management.

Around 6,000 records were received for the three days which is well below the normal volume of data expected for Moth Night. Although the event was held over three days, the main factor for the low return was yet again the weather, which is ironic as Moth Night is now being held over 3 days to improve chances of reasonable weather for at least one night!

The introduction of online recording was generally well received although some teething problems were experienced by some recorders. The full results and highlighted significant records will appear in the spring 2013 issue of *Atropos*.

Moth Night 2013 will be held on 8– 10 August and will include a daytime element. The theme will be 'tiger moths'; in particular we want to encourage recorders to target the mixed fortunes of the range-expanding **Jersey Tiger** *Euplagia quadripunctaria* and the declining **Garden Tiger** *Arctia caja*. **Ruby Tiger** *Phragmatobia fuliginosa* will also be on the wing at this time and is an attractive species that will doubtless be popular at public events. As always, recorders are free to pursue their own target species and are encouraged to submit their data into the online recording system. Full details of the event will appear in *Atropos* but it will follow a similar format to Moth Night 2012 (hopefully with better weather!)

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## 5.3 Butterflies for the New Millennium

The *Butterflies for the New Millennium* (BNM) project, the butterfly distribution recording scheme for Britain and Ireland, continued successfully during 2012. The year was the third in the current five-year survey (2010-2014) and numbers of records are expected to be relatively low as a result of the terrible weather that affected most parts of Britain and Ireland during much of 2012.

A major activity during the year was the collation of records for the preceding year, 2011. As usual, there was a great response from BNM Local Co-ordinators/County Recorders and over 452,330 butterfly records for 2011 have been submitted and collated into the BNM database. Datasets of 2012 records are already arriving and being processed ahead of the annual data deadline on 31 March.

Feedback was maintained with the recording community and wider public via newsletters and articles in *Butterfly* magazine and the mainstream media. The annual National Butterfly Recorders' Meeting took place on 17 March 2012 and was very successful – 113 people attended, which is the largest audience ever for the meeting which has been running since the 1990s.

On the software front, there were two exciting developments during the year. Work commenced with the Centre for Ecology & Hydrology (CEH) (who are very kindly funding the development) and Bristol University to develop a butterfly recording smart phone app for the BNM recording scheme. The app should be ready for the next butterfly recording season (i.e. around Easter 2013) and will be available in iPhone and Android versions. Records will be stored in the CEH data 'warehouse' from where they can be accessed directly by BNM Co-ordinators or downloaded annually by BC Head Office and sent out to all BNM Co-ordinators in spreadsheet format. Second, Jim Asher has been redeveloping the Levana recording software so that it will work on the new generation of 64bit operating systems, such as Windows 7. A beta version of the record input, edit, search and export module is being tested.



Research use of BNM data continued during the year, involving a wide range of Universities and Institutes. Six scientific papers were published in peer-reviewed academic journals during the year, including one in each of the very high-ranking international journals *Science* and *Proceedings of the National Academy of Sciences USA*.

Funding for the BNM project remained strong during 2012. Each of the UK statutory nature conservation agencies: NRW, NE, the NIEA and SNH provide funding, as well as Forest Services, FCE and the Redwing Trust.

Most importantly, many thanks to all those butterfly recorders and Local Co-ordinators who participated in the BNM recording scheme during 2012.

Contributed by Richard Fox, Surveys Manager, rfox@butterfly-conservation.org

## 5.4 Butterfly monitoring – progress in 2012

2012 marked the fifteenth year of national collation of butterfly transect data by BC. The data contributes to the UK Butterfly Monitoring Scheme (UKBMS), jointly run by BC and CEH. The scheme is funded by a consortium of governmental agencies led by Joint Nature Conservation Committee (JNCC) with current funding secured until April 2014.

The UKBMS III project, which runs from 2011-2014 has six main workstreams described below:

1. Maintenance of the core scheme of over 1,000 sites (~90% transects) which are currently monitored by over 1,500 recorders annually. This includes core actions such as the maintenance of current databases, collation of the transect and other annual monitoring data, analysis and production of annual butterfly trends at UK and country level, and by habitat type and the dissemination of these trends at the annual National Recorder's Meeting and in the annual report to recorders.
2. Operation of the Wider Countryside Butterfly Scheme (WCBS), supporting annual sampling at approximately 700 sites. Analysis will be undertaken to test for differences in species trends between WCBS and core UKBMS sites (which predominantly sample semi-natural habitats).
3. Regional development of the UKBMS: to develop and promote standards for more systematic monitoring of target species
4. Annual update of butterfly biodiversity indicators: for UK, England and Scotland. See [http://www.ukbms.org/butterflies\\_as\\_indicators.htm](http://www.ukbms.org/butterflies_as_indicators.htm).
5. Analytical developments related to obtaining more indices from existing data and calculating national collated indices using both WCBS and core scheme data.
6. Development and implementation of online recording for the UKBMS, to be tested in 2012. The online system will aim to facilitate improved feedback to recorders, enabling the status of butterfly populations to be reported more rapidly. Online recording will encompass both core scheme and WCBS data, with separate data entry screens for each. Key features of the Transect Walker software will be retained where possible, whilst this software will remain as an alternative option for submitting data.

Highlights from the core scheme in 2012 included:

### Data collation

In spite of dreadful weather, 2012 was another record year for data capture – by the end of January 2013, data from 979 transects had been collated, compared with 966 transects the previous year (1.3% increase). Remarkably, the number of transects contributing to the scheme has increased year on year in all but one of the 36 year series (the Foot and Mouth year of 2001 being the exception).

### Reporting

A National Recorders meeting was held in March 2012 and attended by c.100 people. The production of the UKBMS annual feedback report to recorders for the 2011 season was completed in late winter 2012. The 54-page report contains the latest trends and results from the UKBMS and can be downloaded from [www.ukbms.org](http://www.ukbms.org). The report highlighted that in 2011 trends were assessed for 56 of the 59 regularly occurring UK species, which is two more than ever before, with the inclusion of **Swallowtail** *Papilio machaon* and **Glanville Fritillary** *Melitaea cinxia*.

2011 was a record breaking year for butterflies being on the wing early as a result of the exceptionally warm spring, with 22 species showing their earliest flight dates since monitoring began in 1976 - species such as **Orange-tip** *Anthocharis cardamines* and **Green Hairstreak** *Callophrys rubi* were on the wing up to three weeks earlier on average than in 2010. A further 10 species recorded their second earliest flight dates. Spring species had a superb year with Orange-tip having its best year on record and a number of Priority Species showing large annual increases: **Pearl-bordered Fritillary** *Boloria euphrosyne* and **Duke of Burgundy** *Hamaeris lucina* in particular had a good year with increases greater than 50% compared to 2010. After a superb start, the season repeated the pattern of 2007-2010 and fell away with cool and wet summer weather resulting in the majority of later summer species having a poor year. As a result, it was a distinctly average year overall, ranking 18 in the 36-year series. A number of species that had a superb year in 2010 showed large annual declines, including **Marsh Fritillary** *Euphydryas aurinia*, **Wood White** *Leptidea sinapis*, **Common Blue** *Polyommatus icarus* and **Brown Argus** *Aricia agestis*. Amongst some of those species that fared poorly in 2011 were species that have been showing long-term declines. After a modest recovery in 2009 and little change in 2010 **Small Tortoiseshell** *Aglais urticae* declined again in 2011 producing its fourth lowest index of the series. **High Brown Fritillary** *Argynnis adippe* numbers, already at their third lowest since 1978 in 2010, showed no change in 2011 despite many of the other threatened fritillary species having a good year.

### Regional development

A Regional development plan (2012-2014) was produced for BC volunteers and Regional Staff - to improve targeting of new recording effort and also monitoring coverage of habitat specialist species occurring in the UK. The plan promotes increased use of reduced effort monitoring methods to help fill these coverage gaps. New guidance on methods (timed counts and Marsh Fritillary larval webs) was compiled and circulated to BC Branches and conservation partners. Current guidance forms are available for download in the 'Resources' area of the UKBMS website - [www.ukbms.org](http://www.ukbms.org). New guidance on monitoring numbers of **Brown Hairstreak** *Thecla betulae* eggs will be available in summer 2013. An online facility for timed counts and larval web searches has been built into Online Transect Walker and will be available for data entry in 2013. Please continue to check the UKBMS website for the latest news on these developments.

### Wider Countryside Butterfly Survey (WCBS)

The Wider Countryside Butterfly Survey (WCBS) is the main scheme for monitoring population changes of the UK's common and widespread butterflies. The survey is a partnership project run jointly by BC, the British Trust for Ornithology (BTO) and CEH. The WCBS ran for its fourth year in 2012 and despite the terrible weather across the UK, participation was at an all time high. In total 1,548 visits were made to 771 randomly selected 1km squares by 648 recorders, who collectively counted 64,452 butterflies of 46 species. This is a substantial improvement in volunteer effort, with a 17% increase (114) in squares sampled than in 2011. The number of recorders was up by 20%; however, the number of butterflies counted fell by 5% compared to 2011.

In 2012 82% of the UK's regularly occurring butterfly species were recorded. Pearl-bordered Fritillary, Wood White, Brown Hairstreak and Swallowtail were not recorded in 2012. But **Grizzled Skipper** *Pyrgus malvae*, Marsh Fritillary and **Purple Emperor** *Apatura iris* were recorded again after an absence in 2011. The **Northern Brown Argus** *Aricia artaxerxes* was recorded for the third year being present in eight squares.

Good coverage (present in 30 squares or more) was achieved for most of the target wider countryside species, the exceptions being Brown Argus and **Scotch Argus** *Erebia aethiops*. Optional spring visits occurred at 98 squares increasing coverage for spring flying species such as the Orange-tip which was present in 52 squares.

For the fourth consecutive year **Meadow Brown** *Maniola jurtina* was the most abundant species, 18,629 individuals were counted in July and August, almost twice as many as in 2011. Meadow Brown was also the most widespread butterfly for the third successive year occurring in 89% of squares, compared with 81% in 2010 and 2011. The majority of other species fared poorly; in fact it was the worst year in the four year series. Mean butterfly abundance has declined year on year in the WCBS and diversity is approximately half that encountered in 2009. On average, recorders counted 44 butterflies of four species per survey made over July and August in 2012, compared with 80

butterflies and eight species in 2009. Small Tortoiseshell had another bad year, occurring in less than half of squares sampled and in less than half the numbers counted in 2011. **Wall Brown** *Lasiommata megera* was only found in 4% of squares in 2012 and numbers were down by 30%. Common Blue also had a terrible year being found in 50% fewer squares than in 2011.

### **Moths and Dragonflies**

Recorders were encouraged to count day-flying moths and dragonflies within their WCBS squares. Records were generated for 403 squares (52% of the total). In total, 947 individual moths of 39 species; (two fewer than last year) were counted. For the fourth consecutive year, **Silver Y** *Autographa gamma* was the most widespread species, being recorded in over half (121) of squares. The Silver Y was also the most abundant moth, with a total of 280 individuals were counted. The second most widespread moth for the fourth year in a row was the **Six-spot Burnet** *Zygaena filipendulae* with 247 individuals counted from 45 squares, with this species being almost twice as widespread and abundant as 2011.

Twenty-eight species of dragonfly were recorded, three more than in 2011, with 3,166 individuals counted. The most abundant species was the **Common Blue Damselfly** *Enallagma cyathigerum* (890 counted), whilst the second most abundant species was the **Common Darter** *Sympetrum striolatum* (534 counted). It was a good year for the latter species, with twice as many counted as in 2011 and presence in twice as many squares. Full details of the survey are available on the UKBMS website and via the annual feedback newsletter which has been sent to be sent to all participants.

The WCBS will run for a fifth year in 2013, and at a welcome higher resource level for training and promotion. The scheme is vital to help us assess whether nationwide conservation measures are having a measureable impact in helping to conserve and restore butterflies across the countryside as a whole. There are many squares available for survey across the UK and new volunteers are welcome to get involved. We really need your help to substantially increase coverage.

All that is required is two core visits per year to an allocated 1km square (one in July and one in August) with an optional spring visit to count Orange-tips and other early flying species. Depending upon the terrain one visit takes approximately an hour. For further details on how to take part contact the National WCBS Coordinator, Zoë Randle (survey@butterfly-conservation.org) or 01929 406006.

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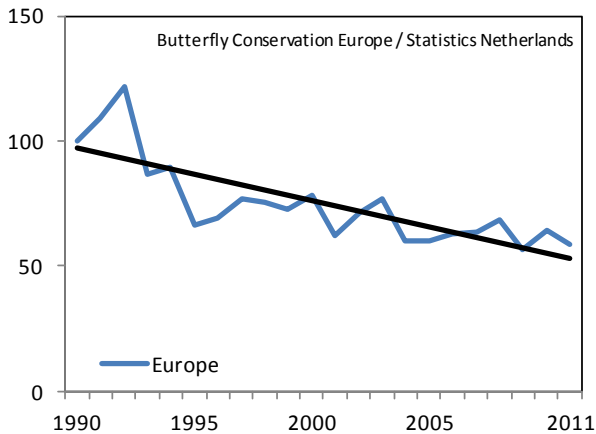
## **6 News and Notes**

### **6.1 Butterfly Conservation Europe – summary for 2012**

This year BC Europe successfully joined forces with the European Forum on Nature Conservation and Pastoralism (EFNCP) to obtain an EU core grant for a joint programme that focussed on improving European policies on biodiversity and High Nature Value farming, as well as promoting butterflies as indicators. They employed Sue Collins as a joint Policy Advisor, working with their expert Guy Beaufoy. Together, they worked with the European Habitats Forum to comment on various EU policy documents and make the case for HNV farming as part of the CAP reform 2015 process.

There are already butterfly monitoring transects in 19 countries, but there are gaps in several Mediterranean and eastern European countries. In order to improve the network we produced a Butterfly Monitoring Manual which has been translated into Spanish and Romanian (Van Swaay et al, 2012). We also ran workshops in both Spain and Romania to explain the transect method and establish networks of interested volunteers and professional entomologists. In order to make the case for further development of butterfly monitoring, we produced a report describing the current situation and options for developing a suite of European indicators using butterflies (Van Swaay & Warren, 2012).

Under a separate contract with Dutch BC, we produced an update of the European Grassland Butterfly Indicator, which is made up from collated indices of 17 characteristic grassland species. The results showed a continuing decline of these species, by almost 50% in 20 years.



**The European Butterfly Indicator for Grassland species 1990-2011.** The indicator is based on Butterfly Monitoring Schemes in nineteen European countries and seventeen characteristic grassland butterfly species. The indicator shows a decline of over 50% in 20 years.

**Countries contributing their data to the European Grassland Butterfly Indicator:**

- Andorra (part of the Catalan scheme): since 2004
- Belgium (Flanders): since 1991
- Estonia: since 2004
- Finland: since 1999
- France: since 2005 (Doubs area 2001-2004)
- Germany: since 2005 (Nordrhein-Westfalen since 2001, Pfalz-region for *P. nausithous* since 1989)
- Ireland: since 2007
- Jersey: 2004-2009
- Lithuania: since 2009
- Luxembourg: since 2010
- Norway: since 2009 (not used in indicator)
- Portugal: 1998-2006
- Romania: starting up
- Russia - Bryansk area: since 2009
- Slovenia: since 2007
- Spain (Catalonia: since 1994, Andalusia, Extremadura and Basque country starting up)
- Sweden: since 2010
- Switzerland: since 2003 (Aargau since 1998)
- The Netherlands: since 1990
- Ukraine (Transcarpathia): since 1990
- United Kingdom: since 1976



**In 2011 approximately 3500 transects were counted.**

We have been awarded a contract with IUCN to produce a Red List of Mediterranean butterflies. Experts have been found in almost every country surrounding the Mediterranean Sea to provide data to make an objective assessment. In 2011 and 2012 drafts of all maps and species accounts were produced for the Mediterranean area. This material will be used to produce a first draft of the Red List early in 2013 to be discussed fully at a workshop in Malaga during February.

We successfully applied for a MAVA grant to produce species recovery plans for 4 species that are endangered and endemic to Spain: ***Euchloe bazae***, ***Agriades zullichi***, ***Polyommatus violetae*** and ***P. golgus***. Fieldwork started in July 2012 with the objective of starting to gather data on population, habitat and threats for three of the four species. The project involves staff of the Sierra Nevada National Park, Zerynthia and Plebejus (NGOs working on the conservation of butterflies in Spain), professors and students from the Autónoma University of Madrid, amateur lepidopterists from Granada and volunteers from the European Interest Group (EIG) of BC-UK.

Thanks to a small grant from the Mohammed Bin Zayed (MBZ) fund, we have begun a study on the **Macedonian Grayling** *Psuedochazara cingovskii*, one of two Critically Endangered butterfly species in Europe (the other, the **Madeiran Large White** *Pieris wollastoni*, is thought to be extinct). A team of local experts and volunteers from Serbia and Dutch BC surveyed the only known site, which

is threatened by marble quarrying. Several new localities were found and mark-recapture experiments estimated the original core population to be over 3,000 adults. Thanks to this new information, we are recommending that the species can be downgraded to Endangered. As part of the conservation programme, a sign board explaining the butterfly and its requirements was erected at the core site and leaflets were distributed to the owners of all known sites, most of which are currently being quarried for marble. We hope to engage with the owners in future to ensure that the habitat is restored after quarrying to ensure a good long term future for the species.

All reports and a full Activity Report is available on the BCE website [www.bc-europe.org](http://www.bc-europe.org)

Contributed by Dr Martin Warren, [mwarren@butterfly-conservation.org](mailto:mwarren@butterfly-conservation.org)

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## 6.2 Update on Butterfly Conservation Reserves in 2012

In May 2012 BC purchased an exciting new reserve in the Cotswolds. **Rough Bank**, near The Camp, Stroud, comprises 3 land parcels totalling 18ha the largest of which (almost 10ha) is SSSI. The site had been carefully managed over the previous decade by Natural England (NE) and the National Trust (NT) under their Cotswold Grazing Project in agreement with the previous owners. The cattle grazing and other works under the owners' Higher Level Stewardship Scheme agreement was getting the site into very good condition, but the whole farm of which it was part had to be sold off. Thanks to generous donations from BC supporters through an emergency appeal and a major grant from NE, and the supportive cooperation of the vendors, BC was able to purchase the site. Two largely unimproved fields linking with the SSSI and associated woodland, but lying alongside the access from the public highway were included in the purchase to continue providing back-up grazing land for the NT's cattle. These are used to graze a series of important conservation grassland sites in this key landscape but at certain times of the year need to be kept off the more sensitive grasslands on more productive and resilient pasture. These fields nevertheless have reasonable floras which are improving in quality.

The reserve supports 4 species of blue butterflies (**Adonis** *Polyommatus bellargus*, **Chalkhill** *Lysandra coridon*, **Small Cupido minimus** and **Common** *P. icarus*) as well as a good range of other grassland butterflies. It was a known site for our native **Large Blue** *Phengaris arion* before it became extinct in the Cotswolds in the 1970s, and is a prospective site for a future re-introduction when suitable again. The site also used to support **Duke of Burgundy** *Hamaeris lucina* and with good scope for restoring its habitat, natural re-colonisation from a colony about 2km away is a good prospect.

The high quality Cotswold grassland provides a rich flora with a notable assemblage of orchids such as Fly *Ophrys insectifera*, Bee *O. apifera*, Green-winged *Orchis morio*, Pyramidal *Anacamptis pyramidalis*, Fragrant *Gymnadenia conopsea* and Lesser Butterfly *Platanthera bifolia*. The woods support both White *Cephalanthera damasonium* and Broad-leaved Helleborines *Epipactis helleborine*.

The moths were not well known at the time of purchase except for a relatively recent record for **Narrow-bordered Bee Hawk-moth** *Hemaris tityus* but Gloucestershire Branch member Guy Meredith has been avidly surveying since last spring producing a growing list with many interesting species. By the end of last summer the site list totalled 242 (160 micros & 82 macros) – of which 234

had been recorded that year. This includes 27 of the 28 nationally scarce (Na & Nb) and nationally rare (pRDB) species currently known from the site, mostly micro-moths. These included a first ever county record for *Trifurcula headleyella* (pRDB2) whose larvae mine Self-heal *Prunella vulgaris* leaves, and firsts for *Coleophora niveicostella* (pRDB3) since 1916 and for *Epermenia profugella* (pRDB2) since 1983.

As parking and access facilities for this new reserve are still in development visiting arrangements are presently limited.

Two existing BC reserves were extended during the year following the principles in our recently revised acquisition strategy. These are to consolidate sites with further habitat for the key species and land that can facilitate or improve our management of the reserves. With reserves often being steep or with other characteristics that make them unappealing to many commercial cattle graziers and the low numbers of animals needed at any one time to undertake the usually light or extensive stocking regimes, finding stock for this vital management mechanism is usually a struggle. The limitations imposed by bovine TB testing are also increasingly an issue and having pasture of lower conservation value onto which stock can be removed, or kept to provide more flexibility in grazing regimes, has become a necessity.

Hampshire's **Magdalen Hill Down** reserve has been extended again by leasing a further 3.5ha of rough grassland which can hold grazing stock when they are not needed on other parts of the reserve. The Old Allotments is an area at the Winchester end of this south-facing escarpment which before the M3 cutting separated it from the city, had for many years been used as allotments. It also supports some neglected chalk grassland habitat.

First established in the early 1990s the reserve now covers 45ha of original restored chalk downland and is a haven for flowery chalk grassland and its butterflies especially the Chalkhill Blue.

Our grazing system is changing to use fewer animals but for longer periods and to start using them on the key habitat areas in low numbers during the spring and summer months. It will particularly involve using the hardy Shetland and Hebridean sheep that also graze the nearby water meadows for the Hampshire Wildlife & Isle of Wight Wildlife Trust. These are keen on browsing the young scrub growth that is a constant control issue on this site. Keeping the increasingly lush grass growth in check is another challenge, and for this the sheep will be joined by a conservation herd of British White cattle belonging to Rue Ekins (Grazing Officer for the Trust) and Richard Collingridge.

**Marsh Fritillaries** *Euphydryas aurinia* were seen back on **Caeau Ffos Fach** during summer 2012, bringing much relief after a few years without confirmation of their continued presence on this reserve. During this time they moved around nearby sites in this key landscape as suitable habitat became available there. The Mynydd Mawr project was a major landscape initiative started by BC in this part of Carmarthenshire some 8 years ago and funded by the Countryside Council for Wales (CCW). The habitat improvements it made on many sites, together with the better awareness of the Marsh Fritillary's needs are still in evidence. That has improved prospects for sustaining the species meta-population, and also benefits the functioning of our relatively small reserve. Early in 2013 BC completed negotiations with CCW (now part of Natural Resources Wales – NRW) to lease **Median Farm** – a small abandoned farmstead adjacent to our reserve. Covering just over 10ha it has 4.4ha of SSSI Rhos pasture which connects directly with our reserve. These fields have been grazed together in the past and have also long provided a combined habitat resource for the butterfly. The holding also has a further 5.6ha of semi-improved grassland of varying character, some which can readily become suitable for Marsh Fritillary whilst the remainder will provide the additional, drier pasture that is needed to support the cattle herd and a much more flexible grazing regime.

Contributed by John Davis, Head of Reserves, [jdavis@butterfly-conservation.org](mailto:jdavis@butterfly-conservation.org)

### **Prees Heath Common Reserve**

The ambitious programme of works on 29ha of previously intensively cultivated arable land to re-create heathland continues as a long term project. In 2012 the results on the 6.5ha area sown with heather brash in 2007 have been successful to the extent that this is now considered restored. Last autumn we were able to brush harvest heather seed from this area to sow on other areas where

heathland is yet to be fully established.



Brush harvesting seed on a restored area

A grant from the Veolia Environmental Trust in 2012 facilitated this work, as well as the following:

- Restoring to grassland 2.5ha where spoil from the pond excavated in 2010 was spread.
- Enabling 160 children from Prees CE Primary School to access the reserve to see and learn about the Silver-studded Blue.
- Contracting Dave Grundy of DG Countryside to survey for moths from May to September 2012. This has brought the total Lepidoptera list for the reserve up to 459 species. Two species new to Shropshire were recorded - ***Chionodes fumatella*** & ***Chionodes distinctella***.
- Repeating the ant survey conducted in 2009 on two of the restoration areas, with aim of tracking colonisation of the new habitats by the Black Ant *Lasius niger* with which the **Silver-studded Blue** has a symbiotic association.
- Continued work to remove ruderal weeds and seedlings of birch and willow throughout the reserve.
- Installation of a new information panel outlining the richness of wildlife to be found on the Common.

An application to place the reserve into the Higher Level Stewardship scheme agreement starting in April 2013 has been submitted to NE. The Silver-studded Blue transect, which has been walked since 1991, saw its second lowest count in 2012, probably due to the poor summer weather.

Meres and Mosses Landscape Partnership Scheme (LPA) and Nature Improvement Area (NIA):

Part funding for some restoration of the old airfield control tower on the reserve, along with production of interpretation resources and habitat improvement works has been secured from this major landscape project. We hope these works will come to fruition in 2013 and will include a detailed description of the ecology of the Silver-studded Blue.

The Meres and Mosses area of North Shropshire, south Cheshire, and a small part of Wales is of international importance, and a Landscape Partnership Scheme has been established involving key nature conservation and other organisations, including BC. Grants of approaching £2m have been made by the Heritage Lottery Fund and, as a NIA, by NE. Prees Heath Common Reserve falls within this area and has already benefitted by way of access improvements.

The ambitious five year programme will deliver over 300 individual projects aimed at conservation, community engagement, access, heritage skills and learning. Communities and landowners are being engaged to have their say in how key sites will be conserved and managed in their locality. Advice and assistance will be available to farmers focused on nutrient management, diffuse pollution, habitat restoration and agri-environment schemes. Grants will be available to both communities and landowners for projects which enhance conservation within their area.

Last year, as a precursor to the Meres and Mosses programme, a training event on butterfly identification and recording was held at The Moors in Ellesmere where **Small Pearl-bordered Fritillary** *Boloria selene* had been recorded 20 years previously and where Shropshire Council had

carried out some scrub clearance. Surprisingly, one Small Pearl-bordered Fritillary was found. The event will be repeated later this year at this site and on Whixall Moss, another site where historical records exist for this species. Small Pearl-bordered Fritillary as well as a range of other lepidoptera should benefit from the project.

Contributed by Stephen Lewis, Prees Heath Officer, slewis@butterfly-conservation.org

### 6.3 Conserving Lepidoptera on Forestry Commission Land

In England, BC has been working with Forestry Commission England (FCE) to implement the priorities identified in *Lepidoptera on Forestry Commission land in England, Conservation Strategy 2007-2017*. The Strategy details 140 FCE sites known to be important for butterfly and moth species. Due to the changes of the FCE Districts, site disposals and acquisitions, management practices and resulting Lepidoptera presence the strategy is currently under review.

In 2012 BC regional and head office staff have visited a minimum of 41 priority sites listed in the Conservation Strategy to carry out habitat assessments, Lepidoptera surveys, practical habitat management (through 43 work parties or by managing contractors on site), to provide management advice and to lead public events and training workshops. Management advice has been provided on a minimum of 30 priority sites.

Each year at least one Forest District review meeting has been held with relevant FCE staff, BC staff and local recorders involved with monitoring the priority sites listed in the strategy. However, due to structural and staff changes in FCE a 'District Review' meeting was not held in 2012. Once the new FCE District Ecologists settle into their posts, the mid-term review of the *Lepidoptera on Forestry Commission land in England, Conservation Strategy 2007-2017* is complete and an FCE Ecologist meeting has taken place, one of the six Forest District areas will be selected as a priority and a review planned for this coming year.

The publication, *Speckled Wood*, a biannual email newsletter, is distributed to FCE staff, local butterfly and moth recorders and BC branches. It is envisaged that this will promote good management practices through the exchange of information and reports of Lepidoptera success as well as ensuring the profile of the Conservation Strategy is maintained. In 2012 reports included; South East England Forest District Update-Part 2, *Saving Devons Precious Pearls* project at Haldon Forest update, Shoulder-striped Clover in the New Forest, Considerations for moth recording, Wood White Recovery in Northamptonshire, Brown Hairstreak Project results, Chalkhill Blues at Friston Forest, Bare Ground Ride Management in the Brecks for the Basil Thyme Case-bearer and Grey Carpet moths and Mothing in Maulden Wood as well as advertising some new publications.

BC has a number of projects in key landscapes which include work on priority sites listed in the Conservation Strategy. Work in partnership with FC has taken place in a variety of formats from monitoring (e.g. habitat condition assessments in Haldon Forest), site restoration (e.g. BC and FC volunteers planting violets at Great Plantation) to BC led funding for major habitat restoration work. During the past year, BC staff and volunteers have worked on priority FCE sites through the following ongoing projects; *Blackdown Hills project*, *Saving Devon's Precious Pearls*, *Dukes on the Edge*, and *Conserving North York Moors Limestone Grassland for Dukes and Pearls Project*. New projects that commenced in 2012 include; *Morecombe Bay Limestones Phase 2*, *Morecombe Bay Limestones and Wetlands NIA*, *Re-connecting the Wyre*, *West Midlands FC/BC Lepidoptera Strategy* and *Northants Wood White*. The following projects where work has taken place this year but the projects have now come to an end; the *Midlands Fritillaries Project*, *Norfolk Brecks Heathland Restoration for Threatened Butterflies and Moths Project*, *Conserving the High Brown Fritillary on the Morecambe Bay Limestones Project*. See section 4 for more information about these projects.

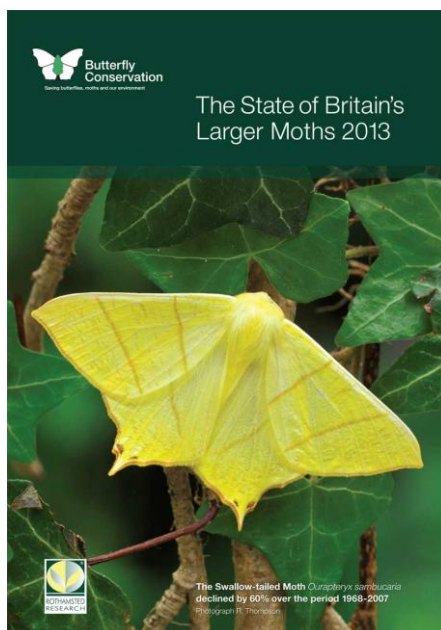
Regionally, in the South West, there have been at least 36 visits made to FC sites through the *Two Moors Project* and *Action for Threatened Species* on at least 20 sites. The purpose of the visits was a combination of species monitoring or surveys, habitat assessments and monitoring as well as management advice and planning. A highlight from this area is that during species surveys, **Drab Looper** *Minoa murinata* was found on two new sites in the New Forest area. The record of its presence at one of those sites will change the sites grading to a Priority A site from a B.



Contributed by Caroline Kelly, *Conservation Officer*. For more information about the Strategy, BC's work on FCE sites, or to receive a copy of the email newsletter (*Speckled Wood*), please contact Caroline Kelly, ckelly@butterfly-conservation.org, 01929 406029.

#### 6.4 The State of Britain's Larger Moths 2013

BC and Rothamsted Research have collaborated to produce a new report on the changing fortunes of macro-moths in Great Britain. This updates the first *State of Britain's Larger Moths* report, which was published in 2006. Copies of the new report, kindly funded by the Esmée Fairbairn Foundation, have already been circulated to County Moth Recorders, BC Branches, conservation organisations, politicians and policy makers and the report is freely available on the Moths Count website ([www.mothscount.org](http://www.mothscount.org)). Further copies are being distributed via meetings of local moth groups, stalls at public events and by BC Branches.



The report is based mainly on a new analysis of 40-years of nightly moth counts from the Rothamsted Insect Survey's (RIS) national network of standard light-traps. From this unique dataset, 40-year population trends have been generated for the period 1968-2007 both for the total abundance of macro-moths and for 337 individual species of generally widespread and common macro-moths. In addition, separate analyses were carried out for the northern and southern halves of Britain.

The results of the RIS analysis are clear and dramatic. Across Britain, the total abundance of larger moths declined significantly, by 28%, during the 40-year period. However, this overall decline masks distinct differences across the nation. In the southern half of Britain, the declines were severe; a 40% decrease in total moth numbers over 40 years. In contrast, moth abundance showed no significant trend in northern Britain, where declines were balanced out by increasing species. A similar north vs south pattern is evident in butterfly populations (see *The State of the UK's Butterflies 2011* report).

Among the 337 common and widespread moths, 227 species (two-thirds of the total) decreased over the 40-year period, including 124 species (37% of the total) whose populations more than halved. The most severely declining species were the **V-moth** *Macaria wauaria* (99% decrease), **Garden Dart** *Euxoa nigricans* (98% decrease) and **Double Dart** *Graphiphora augur* (98% decrease).

On the other hand, 110 species (one-third of the total) became more abundant, with 53 species (16% of the total) more than doubling their populations over 40 years. Notable examples include the **Least Carpet** *Idaea rusticata*, **Blair's Shoulder-knot** *Lithophane leautieri* and **Buff Footman** *Eilema depressa*.

The north vs south divide was also evident among these individual species trends, with species tending to fare far worse, on average, in the southern half of Britain than in the north. The average (median) 40-year population trend in southern Britain was -43%, while in the northern half it was -11%.

Generally, the rates of decline of moths have tended to moderate a little since the first *State of Britain's Larger Moths* report in 2006, but this does not apply to all species and, in any rate, makes negligible difference to the overall pattern of long-term decline.

Although mainly based on the analysis of RIS data, *The State of Britain's Larger Moths 2013* report contains much else of interest. Data from the National Moth Recording Scheme are used show how the distributions of some moths have receded, while those of others have spread, in parallel with the population changes revealed by the Rothamsted analysis. In addition, there are sections on colonisations and extinctions, causes of change and moth conservation.

See the report in full at [http://www.mothscount.org/text/19/moths\\_in\\_decline.html](http://www.mothscount.org/text/19/moths_in_decline.html)

Contributed by: Richard Fox, Surveys Manager, [rfox@butterfly-conservation.org](mailto:rfox@butterfly-conservation.org)

## **6.5 Landscape Scale Conservation Report**

Over the past decade BC has shifted much of its effort to conserve our most threatened species from a focus on single sites to targeting networks of sites across a landscape. This new approach was a response to scientific studies of how butterfly populations behaved in our fragmented countryside. Researchers found that populations on different sites were not completely independent and movement of butterflies between them occurred. So if a population became extinct on one site then providing there was another population nearby then that site may be recolonised. As long as there are as many colonisations as extinctions, then overall the butterfly could be said to be doing okay at the landscape-scale.

The purpose of landscape-scale conservation is still to maintain populations by improving the quality of habitat by clearing scrub, coppicing or grazing etc. But, we try to do that across several sites, and may give a higher priority to a site at the centre of a network than one on the periphery. We also aim to improve connectivity within a landscape, making it easier for butterflies to find new or restored sites, by felling a strategically located plantation which is a barrier to dispersal or sowing a flower-rich field margin. For woodland butterflies, ride-widening can be especially beneficial in landscape-scale conservation, not only improving connectivity but providing breeding habitat in its own right.

### ***New report provides the evidence that landscape-scale conservation really does work***

Last December BC published a report drawing together our experience gained from delivering conservation at a landscape-scale. The report describes 12 case studies from around the UK, including project delivery mechanisms, funding sources, land management changes and the impact on target species. We believe this report is groundbreaking because this is the first time a wildlife organisation has been able to produce evidence that landscape-scale conservation really works. A number of common themes emerge from these case studies; lessons which we believe are applicable to conserving all wildlife.

### ***Lessons from 15 years of landscape-scale conservation***

Landscape-scale projects are nearly always implemented on land that BC does not own and therefore a skilled project officer is essential, firstly to inform owners of the value of their land for wildlife and secondly, to provide the specialist advice to ensure sites are managed to maximise their potential. This is most successfully achieved where project officers can build up long-term relationships with landowners, contractors, volunteers, partner organisations and local community groups who help deliver the work on the ground.

Our most threatened butterflies and moths nearly all have specialised requirements which can only be met in quite specific habitats. Many of our rarer woodland butterflies are only found in open, sunny clearings and rides and do not easily find new habitat within a wooded landscape. So it is imperative that management such as coppicing or ride-widening is targeted in the right places, to give a species the best chance of colonising the new habitat.

Thanks to our amazing volunteers and dedicated staff, BC has one of the most effective wildlife monitoring systems around - essential to monitor the effectiveness of landscape-scale projects. We can

undertake surveys across landscapes and map where colonies are found, calculating how many new colonies have been established or how much new habitat has been colonised. We can also measure changes in abundance, through transects and timed counts, within a landscape and compare that to national trends. All vital when we need to justify that money has been well spent.

The rapidity at which butterflies and moths respond to landscape-scale conservation is also a bonus and can help justify funding. Even within a three-year project significant changes can occur. In Warwickshire the number of **Small Blue** colonies increased from three to eight in three years and some colonisations took place in the same year as management. (Work targeted at one species can also benefit others using the same habitat, and not just other butterflies and moths.)

Landscape-scale projects are not short-term fixes and need proper funding. In our experience at least £100,000 is needed and three years is the minimum timeframe. Costs for land management vary enormously depending on habitat and degree of restoration needed. Leave encroaching scrub on a **Duke of Burgundy** site for another 10 years and the cost of removing it will be much greater - action now is cheaper than later. Key sources of funding have been the Landfill Communities Fund and the Heritage Lottery Fund, with agri-environment and woodland grant schemes both an important delivery mechanism and a means of sustaining the project benefits. In some cases our projects have helped revitalise rural businesses by restoring woodlands to enable woodfuel enterprises to be established.

All our landscape-scale work is delivered in partnership, in some cases with as many as 15 different organisations involved in a single project. When you add in all the landowners, volunteers and community groups, it amounts to a huge number of people working together with a shared vision of how that landscape should look in the future.

We believe we now have a blueprint for survival, not just for our most threatened butterflies and moths but also for many other wildlife groups.

Contributed by: Dr Sam Ellis, Head of Regions, [sellis@butterfly-conservation.org](mailto:sellis@butterfly-conservation.org)

## 6.6 Butterfly Conservation Publicity Review

### OVERVIEW

The weird weather of 2012 proved a key factor in much of BC's press activity with the record-breaking wet summer having a dire affect on many species. Major campaigns such as the Big Butterfly Count, WCBS/UKBMS received widespread publicity and the launch of our Landscape Scale Report was heralded across the environmental movement. Our social media presence went from strength to strength with a dramatically increased following on Twitter and Facebook.

### MAJOR PRESS RELEASES

- :: Big Butterfly Count, launch and results (July and September)
- :: Europe Report (May)
- :: Wider Countryside Butterfly Survey (February)
- :: UK Butterfly Monitoring Scheme (April)
- :: Save Our Butterflies Week (May)
- :: Rough Bank (Large Blue) (May)
- :: Landscape Scale Report (December)
- :: Painted Lady (October)
- :: Moth Night 2012 (June)
- :: Farmland Butterfly Initiative (October)

### BIG BUTTERFLY COUNT

The majority of the environmental press lobby as well as Sky News and the BBC attended London Zoo to watch Sir David Attenborough launch the Big Butterfly Count. The weather hampered the Count with a much lower number of butterflies seen on average counts. BBC Countryfile covered the results as an exclusive.

### SAVE OUR BUTTERFLIES WEEK

A series of videos were produced to promote our conservation work and reserves as part of Save Our Butterflies Week. SOBW was covered by the BBC and Sunday Telegraph amongst others.

### MOTH NIGHT 2012

A weekend of incessant rain hampered Moth Night last year with a number of planned events cancelled due to the weather. The event still gained widespread coverage with stories running in the Telegraph,

Independent, Daily Mail, BBC website and BBC Radio 1.

#### **EMAIL NEWSLETTER**

To coincide with the launch of the new website last December the press office also launched a monthly e-newsletter 'All Aflutter' going to all Big Butterfly Count participants with sign up available via the website.

Contributed by Liam Creedon, Publicity Manager. For further information contact Natalie Ngo, [nngo@butterfly-conservation.org](mailto:nngo@butterfly-conservation.org)

### **6.7 The Moth Challenge Fund (supported by the Patsy Wood Trust)**

Moths are a beautiful and endlessly fascinating part of our natural world. They play a vital role in the functioning of ecosystems, as a key component in the food chain and as plant pollinators. Their wholesale decline, with two thirds of UKs common and widespread moths suffering declines in their populations and an often shrinking distribution, is indicative of a diminishing insect biodiversity likely to impact more broadly on all our fauna and flora. Habitat loss and change, through agricultural practices, woodland management and urbanisation have contributed to these declines.

With your help we **can** do something. To help conserve these insects, part of our natural heritage, Butterfly Conservation has established a Moth Challenge Fund to support conservation projects across the country. The fund will help to pave the way for more sympathetic management of sites and habitats, and drive an ambitious conservation programme.

For further information or to make a donation please visit the JustGiving website and search for The Moth Challenge Fund, alternatively follow the following link: <http://bit.ly/WHXm0o>

## **7 Selected Bibliography**

### **Lepidoptera literature 2012 – Mark Parsons & Richard Fox**

This section intends to be a selective bibliography of references primarily of conservation importance or relevance published during 2012, but also includes taxonomic works, such as those that may aid identification. This is not comprehensive and it is probable that we have overlooked some references, for example there are useful articles in the newsletters of local moth groups that have not been trawled for the purposes of this summary. If there are any significant oversights, please let us know and we will try to include them in next year's update. **Unfortunately, we are not able to offer a reference service.** However, for some papers listed below that are published in international journals, an abstract is often available free to view online.

BC produces *Butterfly*, three times a year, which includes illustrated articles on a wide range of Lepidoptera and their conservation. The 2011 Annual Exhibition of the British Entomological and Natural History Society is summarised in the *British Journal of Entomology and Natural History*, **25**: 153-176. There are also many useful records in the field meetings reports in that journal. Dr Paul Waring produces a column on moths for each edition of *British Wildlife* magazine; this covers many aspects of moth recording and conservation. Nick Bowles and Richard Fox produce a similar column for butterflies in the same journal. The GMS (Garden Moth Scheme) has produced seasonal newsletters over the year, highlighting trends for some species, and Light Trap Newsletter No. 37 from the Rothamsted Insect Survey was produced late in 2012. The Microlepidoptera Review of 2011 (although entitled Microlepidoptera Review of 2010) by John Langmaid & Mark Young is published in the *Entomologist's Record and Journal of Variation*, 124: 249-276.

#### **Additions for 2011**

Brazil, A., Dawson, A.P. & Dawson, C.M. 2011. **Thirty Years of Norfolk Butterflies. An Atlas of Distribution.** Butterfly Conservation, Wareham.

Izzard, M.J. 2011. **The History of Butterfly Recording in Northamptonshire 1820-2011.** Bedfordshire and Northamptonshire Branch of Butterfly Conservation.

Witt, T.J. & Ronkay, L. (eds.). 2011. **Noctuidae Europaeae. Volume 13. Lymantriinae and Arctiinae.** Entomological Press, Sorø.

### **Additions to the Lepidoptera fauna of the British Isles**

Beaumont, H.E. 2012. *Pseudococcyx tessulatana* (Staudinger, 1871) (Lep.: Tortricidae, Olethreutinae) in Britain. **Entomologist's Record & Journal of Variation**, **124**: 64-66.

Clement, P. 2012. One to watch out for: *Tuta absoluta* (Meyrick) (Lep.: Gelechiidae) apparently free-flying in Worcestershire. **Entomologist's Record & Journal of Variation**, **124**: 13.

Fletcher, C.H. & Greaves, P.K. 2012. Scalloped Sack-bearer *Lacosoma chiridota* Grote: a possible adventive species new for Britain. **Atropos**, **No. 46**: 77.

Hicks, M. & Clifton, J. 2012. The first British record of Maize Wainscot *Sesamia nonagrioides* (Lefeb.). **Atropos**, **No. 45**: 9-10.

Homan, R. 2012. A British record of *Phyllocnistis citrella* Stainton, 1856 (Lep.: Phyllocnistidae). **Entomologist's Record & Journal of Variation**, **124**: 279-281.

Percival, N.J. & Harvey, M.C. 2011 [2012]. *Harpella forficella* (Scopoli) (Lep.: Oecophoridae) new to the UK. **British Journal of Entomology and Natural History**, **24**: 220.

Sennitt, M. & Pratt, C. 2012. Fir Carpet *Thera vetustata* (D. & S.) – A species new to Britain. **Atropos**, **No. 47**: 2-8.

Sokoloff, P. 2012. Changes to the British Lepidoptera list published during 2011. **Atropos**, **No. 47**: 40-42.

Solly, F. 2012. The first British record of the tortricoid moth *Gravitarmata margarotana* (Hein.). **Atropos**, **No. 45**: 12-13.

Steele, T. 2012. *Pyrausta aerealis* (Hb.): New to Britain. **Atropos**, **No. 47**: 62-63.

Sterling, P.H., Evans, D. & Jeffes, M. 2012. *Musotima nitidalis* (Walker, [1866]) (Lepidoptera: Crambidae) new to Britain. **Entomologist's Gazette**, **63**: 43-47.

Terry, R. 2012. *Bucculatrix chrysanthemella* Rebel, 1896 (Lep.: Bucculatricidae) new to Britain. **Entomologist's Record & Journal of Variation**, **124**: 59-63.

Winterman, N. & Hunter, J. 2012. Black-spotted Chestnut *Conistra rubiginosa* (Scop.): New to Britain and here to stay? **Atropos**, **No. 46**: 3-6.

### **Distribution maps/atlasses, county and local lists**

Anon. 2012. County Moth Recorders and Moth Recording Schemes. **Entomologist's Record & Journal of Variation**, **124**: 1-10.

Bebbington, J., Clatworthy, R., Cotterill, M., Mathieson, I., Newman, P., Ridge, M., Tennant, P. & Urwin, B. 2012. **Macro-moth Distribution Atlas 2011 for Somerset (Vice-counties 5 & 6)**. Somerset Environmental Records Centre/Private Published.

Goddard, D. & Wyldes, A. 2012. **Butterflies of Northamptonshire**. Bedfordshire and Northamptonshire Branch of Butterfly Conservation.

McCormick, R.F. 2012. New County and interesting Lepidoptera records in Devon in 2011. **Entomologist's Record & Journal of Variation**, **124**: 177.

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## Appendix A – List of UK Biodiversity Action Plan Priority Lepidoptera Species

### Current UK BAP Priority butterfly species (2007 list)

<b>Common name</b>	<b>Scientific name</b>
Brown Hairstreak	<i>Thecla betulae</i>
Chequered Skipper	<i>Carterocephalus palaemon</i>
Dingy Skipper	<i>Erynnis tages</i>
Duke of Burgundy	<i>Hamearis lucina</i>
Glanville Fritillary	<i>Melitaea cinxia</i>
Grayling	<i>Hipparchia semele</i>
Grizzled Skipper	<i>Pyrgus malvae</i>
Heath Fritillary	<i>Melitaea athalia</i>
High Brown Fritillary	<i>Argynnis adippe</i>
Large Blue	<i>Phengaris arion</i>
Large Heath	<i>Coenonympha tullia</i>
Lulworth Skipper	<i>Thymelicus acteon</i>
Marsh Fritillary	<i>Euphydryas aurinia</i>
Mountain Ringlet	<i>Erebia epiphron</i>
Northern Brown Argus	<i>Aricia artaxerxes</i>
Pearl-bordered Fritillary	<i>Boloria euphrosyne</i>
Silver-studded Blue	<i>Plebejus argus</i>
Small Blue	<i>Cupido minimus</i>
Small Heath	<i>Coenonympha pamphilus</i>
Small Pearl-bordered Fritillary	<i>Boloria selene</i>
Wall	<i>Lasiommata megera</i>
White Admiral	<i>Limenitis camilla</i>
White Letter Hairstreak	<i>Satyrium w-album</i>
Wood White	<i>Leptidea sinapis</i>

**Total 24**

### Current UK BAP Priority moth species (2007 list)

<b>Common name</b>	<b>Scientific name</b>
Argent & Sable	<i>Rheumaptera hastata</i>
Ashworth's Rustic	<i>Xestia ashworthii</i>
Barberry Carpet	<i>Pareulype berberata</i>
Barred Tooth-striped	<i>Trichopteryx polycommata</i>
Basil-thyme Case-bearer	<i>Coleophora tricolor</i>
Beautiful Pearl	<i>Agrotera nemoralis</i>
Belted Beauty	<i>Lycia zonaria britannica</i>
Betony Case-bearer	<i>Coleophora wockeella</i>
Black-veined Moth	<i>Siona lineata</i>
Bordered Gothic	<i>Heliophobus reticulata</i>
Bright Wave	<i>Idaea ochrata cantiata</i>
Brighton Wainscot	<i>Oria muscosa</i>
Chalk Carpet	<i>Scotopteryx bipunctaria</i>
Chalk-hill Lance-wing	<i>Epermenia insecurella</i>
Clay Fan-Foot	<i>Paracolax tristalis</i>
Common Fan-foot	<i>Pechipogo strigilata</i>
Concolorous	<i>Chortodes extrema</i>
Cousin German	<i>Protolampra sobrina</i>
Currant-shoot Borer	<i>Lampronia capitella</i>
Dark Crimson Underwing	<i>Catocala sponsa</i>
Dark-bordered Beauty	<i>Epione vespertaria</i>
Dingy Mocha	<i>Cyclophora pendularia</i>
Dorset Tineid Moth	<i>Eudarcia richardsoni</i>
Drab Looper	<i>Minoa murinata</i>
False Mocha	<i>Cyclophora porata</i>
Fenn's Wainscot	<i>Chortodes brevilinea</i>

Fiery Clearwing	<i>Pyropteron chrysidiformis</i>
Forester	<i>Adscita statices</i>
Four-Spotted Moth	<i>Tyta luctuosa</i>
Fuscous Flat-body Moth	<i>Agonopterix capreolella</i>
Goat Moth	<i>Cossus cossus</i>
Greenweed Flat-body Moth	<i>Agonopterix atomella</i>
Grey Carpet	<i>Lithostege griseata</i>
Heart Moth	<i>Dicycla oo</i>
Horehound Long-horn Moth	<i>Nemophora fasciella</i>
Large Gold Case-bearer	<i>Coleophora vibicella</i>
Least Owlet	<i>Scythris siccella</i>
Light Crimson Underwing	<i>Catocala promissa</i>
Liquorice Piercer	<i>Grapholita pallifrontana</i>
Lunar Yellow Underwing	<i>Noctua orbona</i>
Marsh Mallow Moth	<i>Hydraecia osseola hucherardi</i>
Marsh Moth	<i>Athetis pallustris</i>
Mistletoe Marble	<i>Celypha woodiana</i>
Narrow-bordered Bee Hawk-moth	<i>Hemaris tityus</i>
Netted Carpet	<i>Eustroma reticulata</i>
Netted Mountain Moth	<i>Macaria carbonaria</i>
New Forest Burnet	<i>Zygaena viciae argyllensis</i>
Northern Dart	<i>Xestia alpicola alpina</i>
Olive Crescent	<i>Trisateles emortualis</i>
Orange Upperwing	<i>Jodia croceago</i>
Pale Shining Brown	<i>Polia bombycina</i>
Pied Tineid Moth	<i>Nemapogon picarella</i>
Reddish Buff	<i>Acosmetia caliginosa</i>
Rest Harrow	<i>Aplasta ononaria</i>
Sandhill Pigmy Moth	<i>Stigmella zelleriella</i>
Sandhill Rustic (Cornish ssp.)	<i>Luperina nickerlii leechi</i>
Scarce Aspen Knot-horn	<i>Sciota hostilis</i>
Scarce Aspen Midget Moth	<i>Phyllonorycter sagitella</i>
Scarce Brown Streak	<i>Aplota palpella</i>
Scarce Crimson & Gold	<i>Pyrausta sanguinalis</i>
Scarce Long-horn Moth	<i>Nematopogon magna</i>
Scarce Pug	<i>Eupithecia extensaria occidua</i>
Scarce Vapourer	<i>Orgyia recens</i>
Shoulder-striped Clover	<i>Heliothis maritima</i>
Silky Wave	<i>Idaea dilutaria</i>
Slate Sober Moth	<i>Syncopacma albipalpella</i>
Slender Scotch Burnet	<i>Zygaena loti scotica</i>
Sloe Carpet	<i>Aleucis distinctata</i>
Small Dark Yellow Underwing	<i>Anarta cordigera</i>
Speckled Footman	<i>Coscinia cribraria bivittata</i>
Straw Belle	<i>Aspitates gilvaria gilvaria</i>
Striped Lychnis	<i>Shargacucullia lychnitis</i>
Surrey Midget Moth	<i>Phyllonorycter scabiosella</i>
Sussex Emerald	<i>Thalera fimbrialis</i>
Sword-Grass	<i>Xylena exsoleta</i>
Water-dock Case-bearer	<i>Coleophora hydrolapathella</i>
Western Sober Moth	<i>Syncopacma suecicella</i>
White-mantled Wainscot	<i>Archanara neurica</i>
White-spot	<i>Hadena albimacula</i>
White-spotted Pinion	<i>Cosmia diffinis</i>
White-spotted Sable Moth	<i>Anania funebris</i>

**Total 81**

(The 71 UK BAP 'Research only' species are not shown above)