

**Butterfly
Conservation**

Saving butterflies, moths and their habitats

**MOTHS
COUNT**

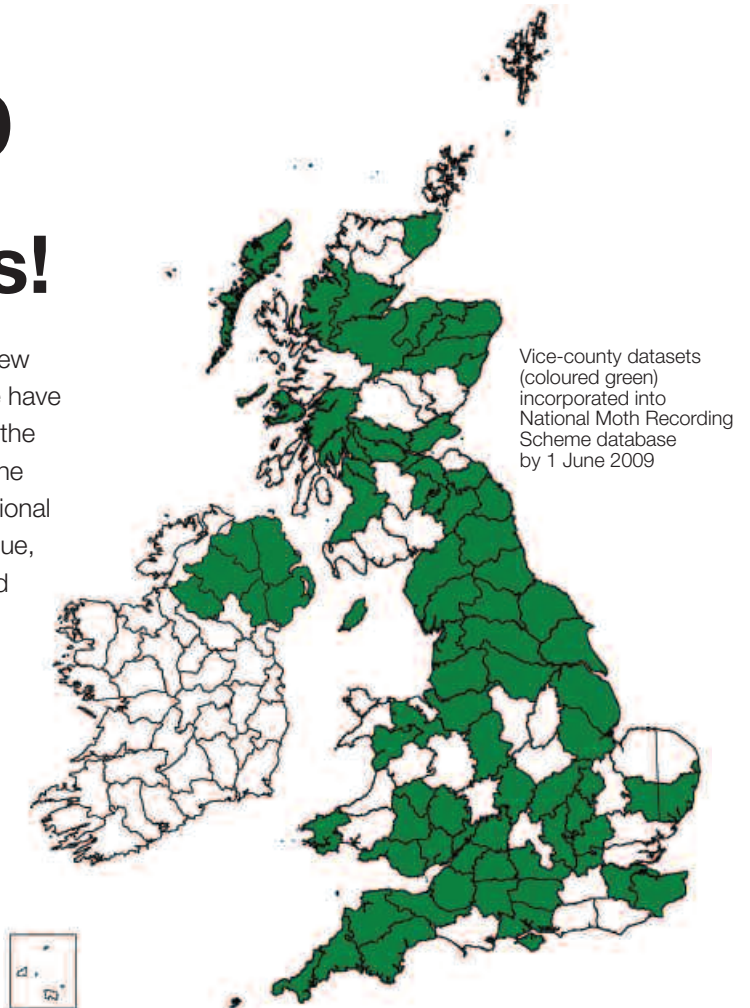


Moths Count Newsletter 2009

Five Million Moths!

Just two years after Sir David Attenborough launched the new National Moth Recording Scheme (NMRS) in May 2007, we have amassed an amazing 5.5 million moth records. This makes the NMRS one of the biggest datasets of biological records in the UK – only the flowering plants database is larger on the National Biodiversity Network Gateway. A large part of the credit is due, of course, to the thousands of moth recorders whose skilled fieldwork generated all of these sightings and to the scores of County Moth Recorders who have toiled tirelessly to verify and computerise the records.

The record that took the NMRS past the five million mark was of a Spectacle from Yarner Wood in south Devon. The oldest moth record in the NMRS database so far is that of a Death's-head Hawk-moth recorded in October 1769 at Felton in north Northumberland. Currently, 80 vice-counties, two-thirds of the total, have contributed (at least partial) moth datasets to the NMRS >>



Spectacle (D.Green)

Sarah-ann Mold



Sarah-ann, the Moths Count project assistant, passed away on 1 April 2009 after a short battle with cancer.

Sarah-ann worked extremely hard to get the Moths Count project and National Moth Recording Scheme off the ground and the successes reported in this newsletter are a tribute to all her effort.

She was a passionate advocate for moths and moth conservation and spread her enthusiasm to all she met. Sarah-ann was an important part of the Moths Count team and is greatly missed by us all.

>> We hope to include the remaining third of vice-county datasets in the national scheme shortly. Some are almost ready and are undergoing final verification and formatting by County Moth Recorders, others require a large amount of work to computerise backlogs of records and will take longer. Due to the increased popularity of moth recording, some county recorders may appreciate assistance with data entry or other tasks - you could see your moth records on the map sooner as a result.

The NMRS has got off to a great start. It will continue to grow rapidly as records come in from the 'missing' counties and updates arrive with sightings from 2008. Our thanks go to everyone who has contributed to making the NMRS such a success.

As reported in last year's newsletter, some 640,000 historical moth records have been computerised by the Biological Records Centre. These have recently been passed to the NMRS and will be disseminated to County Moth Recorders after some central verification. All 10 million or so moth records from the Rothamsted Insect Survey have already been sent to County Moth Recorders, who have been busy checking for errors and incorporating these valuable, additional records into their databases.

A small number of errors have been found in this important dataset, but that's only to be expected when dealing with such a huge volume of records.

Rothamsted Research has asked that County Recorders contact them prior to removing / altering dubious records from the dataset.

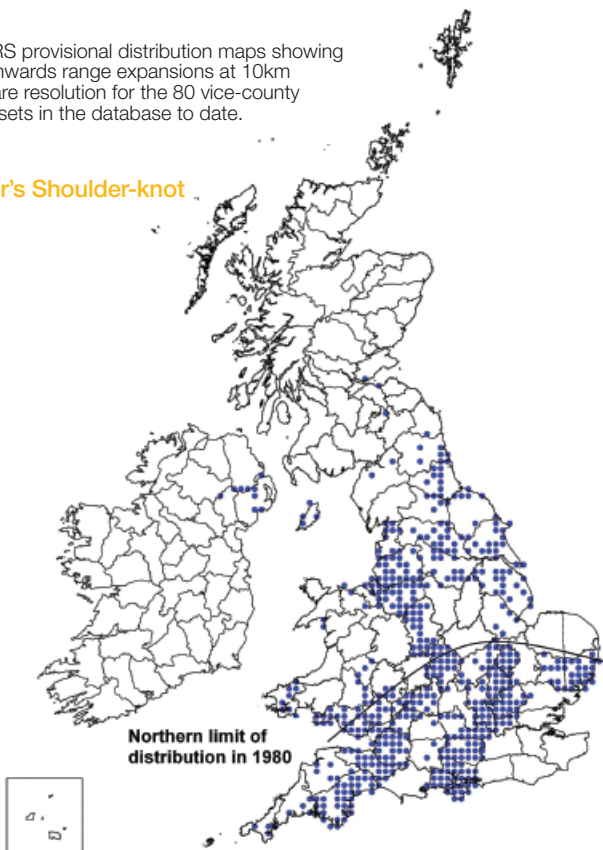
Although the NMRS database does not yet contain records from each and every vice-county, preliminary analysis of the data is revealing some interesting findings. Using comparisons with historical information, it has been possible to gain an idea of the rate at which some moths are moving north (see maps below).

One of the most dramatic changes measured so far is that of the Blair's Shoulder-knot, whose caterpillars feed on Cypresses (including the infamous *Leylandii*). This moth has extended its range 226 miles northwards since 1980. The Orange Footman has spread 147 miles northwards in three decades,

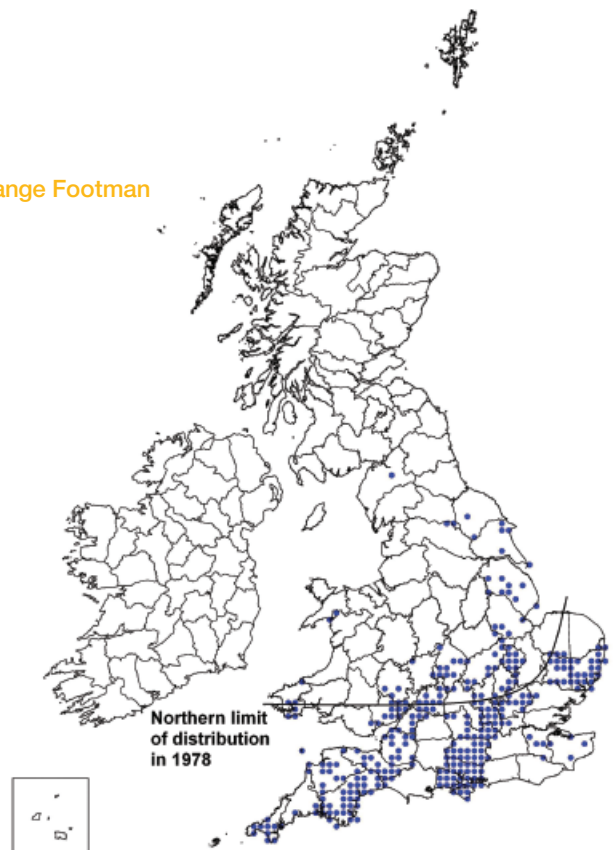


NMRS provisional distribution maps showing northwards range expansions at 10km square resolution for the 80 vice-county datasets in the database to date.

Blair's Shoulder-knot



Orange Footman



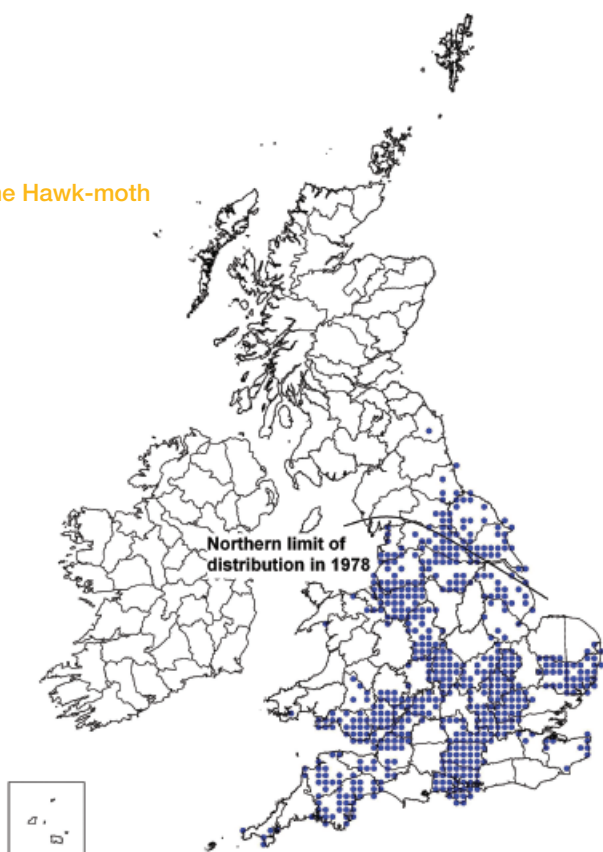
Pine Hawk-moth 108 miles northwards and the Shuttle-shaped Dart 105 miles, presumably in response to climate change. The Red Underwing (86 miles further north) and Lime Hawk-moth (70 miles northwards) also show substantial range expansions. These early results are fascinating and show us the important role that moths can play as indicators of our changing environment. The NMRS database will be a vital resource to help us understand the impacts of changes such as intensive agriculture and global warming on the wildlife of our islands.

A key, and long-awaited, output of the NMRS is the availability of online provisional distribution maps on the Moths Count website (www.mothscount.org). We hoped these would be 'live' during the winter, but encountered significant and unexpected software problems, which have caused a short delay. The problems have been solved and the maps will be available very soon, so keep checking the website.



Lime Hawk-moth (P. Pugh)

Lime Hawk-moth



Moths Count Project Update

One of the main aims of the Moths Count project is to promote interest in moths and raise awareness of the importance of these fascinating insects that are so frequently overlooked by the wider public. We are achieving this, in part through a series of free public moth events run with the help of volunteer moth-ers and partner organisations. Sixty-one public moth events have been held since the Moths Count project started, providing a first experience of moths and moth recording to over 1200 people. A further 33 events have been organised for 2009, from Guernsey to Aberdeen (see the Moths Count website for details).

In addition to the public moth events, we've organised Garden Moths Count for the past three years. Despite poor summer weather, over 2500 sightings were sent in to Garden Moths Count 2008. This year's event took place from 20 to 28 June and focussed on the Peppered Moth, to tie in with the bicentenary of Charles Darwin's birth, and the Scarlet Tiger. The former species has declined by 61% in the Rothamsted Insect Survey (1968-2002), while the latter seems to be increasing its range. If you saw either of these species (or any of the other 18 target moths) during 20-28 June, please log your sightings through the Moths Count website.

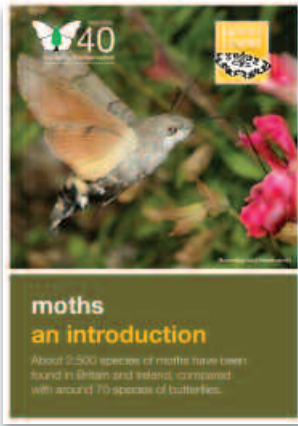


We are also running a simple, online survey throughout 2009 for two species that make amazing intercontinental journeys to reach our shores: the Humming-bird Hawk-moth and Painted Lady butterfly. In late May millions of Painted Ladies fluttered in to the UK, suggesting that this year may be much better for migrant insects.

Please keep a look out and submit your sightings on the Butterfly Conservation website (www.butterfly-conservation.org).

Please contact Laura Wiffen (details at end of this newsletter) if you would like Wanted posters to display to the public. >>

>> Our colourful and informative series of moth leaflets has continued to expand. The latest addition is a *Caterpillars* leaflet, which joins *Moths an introduction*, *Day-flying Moths* and *Garden Moths*. These leaflets are aimed at members of the public and beginners to help raise their awareness of the beauty and diversity of our moth species and to provide some assistance with identification. If you would like free copies to distribute at moth events or to friends and family, please contact Laura Wiffen.



During 2007 and 2008, the Moths Count project organised a total of 74 free training courses for moth recorders and more are running this year.



Exactly 1113 people have attended these training events so far. We welcomed our 1000th participant at the first Moths Count training event of 2009, an identification workshop run by Jon Clifton in Belfast.

To date 30 training events have been arranged for 2009, many of which are suitable for beginners. As well as introductory courses, we also have events focussing on threatened moths, including the Chalk Carpet, Marsh Moth, Netted Carpet, Straw Belle and Welsh Clearwing. Such courses are designed to encourage improved recording and conservation management for these species. To see what is happening near you please see the event listing in the **centre pages of this newsletter**. Further training events will be added to the Moths Count website (www.mothscount.org) as and when they are confirmed. Please remember that training course places must be booked in advance. Unless otherwise stated, booking is via 01929 406009 or nmrs@butterfly-conservation.org

Moths Count has held three national conferences for moth recorders over the past year. The first was the first-ever Northern Ireland Moth Recorders' Conference held at Oxford Island on the shores of Lough Neagh in December 2008. This was followed by a second English Moth Recorders' Conference held at the Birmingham and Midland Institute in January and the Scottish Recorders' Gathering held at Scottish Natural Heritage's Battleby Centre, Perthshire in April. Almost 250 people attended these free events and feedback was extremely positive. There were some excellent talks from amateur moth-ers and academic researchers alike. These meetings provided great opportunities for meeting up with friends and colleagues, old and new.

There is much more work to be done over the coming year and further exciting developments to come. You can keep up to date via our electronic newsletter E-moth.

Are you missing out on E-moth?

This newsletter is produced annually and is sent out as a printed copy. In addition to this we also produce E-moth, our electronic newsletter, approximately four times a year.

The last issue was sent by email in April 2009. If you are not receiving E-moth and would like to, please contact Laura Wiffen (01929 406009 or nmrs@butterfly-conservation.org) with your email address.

More than meets the eye to Garden Tiger declines

The Garden Tiger (*Arctia caja*) has often been cited as an example of a widespread moth in serious decline.

Data from the Rothamsted Insect Survey showed a dramatic 89% decrease in the national population index of this species over the period 1968-2002. It is perhaps less well known that this moth has been the subject of intensive research for almost a decade, resulting in a series of scientific papers that reveal a wealth of detail behind the overall decline figure.

The decline started with a sudden drop (28% decrease) in Garden Tiger abundance in 1984. Numbers have remained relatively constant since then, but at a much lower level than pre-1984. Four-years later there was a significant decrease in the number of sites where the moth was recorded, indicating that the earlier population decline had led to site extinctions. The Garden Tiger was recorded annually at 60% of Rothamsted trap sites up until 1987, but this decreased to 46% in 1988 and has continued to decline since then. The time lag between the decrease in abundance and distribution of species highlights the value of long-term monitoring of abundance and distribution, even in species that are thought to be widespread and common.

The decline of the Garden Tiger has not been uniform across Britain. There have been particularly severe losses in the east and south-east of England. Nowadays, large populations of the moth tend to be found in the far north and west of Britain. The causes of these changes have not been determined but researchers found a very strong correlation between the moth population and climate. Garden Tiger numbers decrease after wet winters and warm springs, presumably due to reduced survival of larvae. This suggests that, as a result of climate change, weather conditions are becoming unsuitable for the moth in parts of southern and eastern Britain.



Garden Tiger (C. Manley)

Unlike many butterflies, which are expected to increase as a result of UK climate change projections, the Garden Tiger is likely to suffer further declines in the future.

The wing shape of Garden Tiger moths has also changed over the years. Recent research carried out by Dr. Sarah Anderson and colleagues has revealed that modern Garden Tigers have longer, narrower hindwings and narrower forewings compared to historical specimens (dating from 1909-1971). Species with narrower wings have increased aerodynamic efficiency for long distance and fast flight and, therefore, have greater dispersal ability.

The changes in wing shape observed in the Garden Tiger suggest a recent adaptation to enable increased dispersal, perhaps in response to habitat fragmentation and climate change. Initially this sounds like good news for the future of the Garden Tiger. However, analysis of DNA from historical and modern moths showed a significant loss of genetic diversity. This may limit the ability of the Garden Tiger to respond to future environmental change.

More information:

Anderson *et al.* 2008. *Ecological Entomology* **33**, 638-645.
 Conrad *et al.* 2002. *Biological Conservation* **106**, 329-337.
 Conrad *et al.* 2003. *Global Change Biology* **9**,125-130.

Forthcoming Moth Recorders' Meetings in South Wales and England

We are holding a South Wales Moth Recorders' Meeting on Saturday 26 September 2009 at **Kenfig National Nature Reserve, Glamorgan**. Several guest speakers have been invited and the event should be very interesting and enjoyable. Further details about this event will be circulated via E-moth and on the Moths Count website. Places are free but will be limited so please book in advance with Laura Wiffen on nmrs@butterfly-conservation.org or 01929 406009. Another English Moth Recorders' Conference is planned for Saturday 23 January 2010. This will be held once again at the Birmingham and Midland Institute in central Birmingham, after the very successful event we had there at the beginning of this year. Full details will be circulated in due course, however, in the meantime please make a note in your diary and keep this date free!

Moth Recording Training Events 2009

Butterfly Conservation is organising a programme of free moth events as part of the Moths Count project, funded by the Heritage Lottery Fund and many other organisations. The following training courses have been organised to cover a range of expertise. Many are suitable for beginners - if in doubt please check when booking. Warm clothing and a torch are needed for evening events. Most of the events are free and require advance booking: unless otherwise stated in the listing below, booking is via **01929 406009** or **nmrs@butterfly-conservation.org**



ENGLAND

South West England

26 / 27 June 2009 *Introduction to moths and moth recording* led by Richard Fox. OCCOMBE FARM, PAIGNTON, DEVON. 20:00 – 00:00 on 26 June and then 10:00 – 12:00 on 27 June. Advance booking not required.

South East England

27 June 2009 *Introduction to the moths of Windsor Great Park* led by Martin Harvey, in association with BBOWT. MAIDENHEAD, BERKSHIRE. 13:45 – 17:30 and 19:30 – 00:00. Advance booking essential via Cathie Hasler cathiehasler@bbowt.org.uk or 01865 788309.

23 July 2009 *Straw Belle training workshop* led by Dave Green. DARLAND BANKS, MAIDSTONE, KENT. 10:00 – 13:00

East of England

18 June 2009 *Introduction to day flying moths and the Four-spotted moth* led by Colin Plant. LITTLE CHESTERFORD, ESSEX. 10:00 – 16:30

21 June 2009 *Introduction to the Day-flying moths of Breckland* led by Jon Clifton. ELVEDON VILLAGE HALL, SUFFOLK. 11:00 – 16:00

6 August 2009 *Introduction to moths and the White-spotted Pinion* led by Paul Waring. RSPB THE LODGE, SANDY, BEDFORDSHIRE. 18:00 – 00:00

22 August 2009 *Introduction to moths and Scarce Pug larval survey* led by Jon Clifton, in association with the RSPB. TITCHWELL, THORNHAM, NORFOLK. 10:00 – 17:00

East Midlands

26 June 2009 *Welsh Clearwing training day* led by Dave Green, in association with Nottinghamshire County Council. SHERWOOD FOREST VISITOR CENTRE, EDWINSTOWE, NOTTINGHAMSHIRE. 10:00 – 15:30

8 August 2009 *Introduction to moths and moth recording* led by Jon Clifton. WHISBY NATURE PARK - NATURE RESERVE, LINCOLN. 15:00 – 18:00 then 20:00 onwards

29 September 2009 *Marsh Moth larval survey training day* led by Paul Waring. SALTFLLEETBY NATIONAL NATURE RESERVE, LINCOLNSHIRE. 10:00 – 17:00

West Midlands

25 July 2009 *Moths of traditional orchards* led by Norman Lowe. HEREFORDSHIRE NATURE TRUST, TUPSLEY, HEREFORD. 20:00 – 00:00

Yorkshire & The Humber

23 July 2009 *Conserving the Chalk Carpet moth* led by Dave Wainwright. MIDDLETON ARMS, NORTH GRIMSTON, NR MALTON, NORTH YORKSHIRE. 10:30 – 15:30. Advance booking essential via Dave Wainwright 01388 488428 or dwainwright@butterfly-conservation.org

North West England

6 June 2009 *Introduction to moths* led by Steve Palmer. RSPB LEIGHTON MOSS, CARNFORTH, LANCASHIRE. 10:00 – 15:30

12 August 2009 *Introduction to the moths of the Lake District (including the Netted Carpet)* led by Dave Wainwright, in association with the National Trust. TARN HOWS, NR CONISTON, CUMBRIA. 20:30 onwards. Advance booking essential via Julie Whitby 015394 41456 or julie.whitby@nationaltrust.org.uk

3 October 2009 *Identification and separation of the pugs via genitalia* led by Jon Clifton, in association with Lancashire Moth Group and Lancashire & Cheshire Entomological Society. LIVERPOOL WORLD MUSEUM, LIVERPOOL. 10:30 – 15:45. Advance booking essential via Guy Knight 0151 478 4369 or guy.knight@liverpoolmuseums.org.uk

PLEASE REMEMBER THAT PLACES ON TRAINING COURSES MUST BE BOOKED IN ADVANCE.



Straw Belle (D. Green)

North East England

5 August 2009 *Introduction to moths and moth recording* led by Dave Wainwright, in association with Alnwick Wildlife Group. INGRAM VILLAGE HALL, NR POWBURN, NORTHUMBERLAND. 20:00 – late. Advance booking essential via Dave Wainwright 01388 488428 or dwainwright@butterfly-conservation.org

SCOTLAND

20 & 21 June 2009 *Slender Scotch Burnet survey* led by Tom Prescott. The aim of the survey is to determine the status of the moth on the island of Ulva and the neighbouring island of Gometra. For further details contact Tom Prescott tprescott@butterfly-conservation.org or 01540 661469 / 07979 785665

WALES

South Wales

4 July 2009 *Introduction to moths and moth recording* led by Norman Lowe. PARC CWM DARREN, BARGOED, CAERPHILLY. 20:00 – 00:00

Mid Wales

11 July 2009 *Identification of difficult moths* led by Norman Lowe. RADNORSHIRE WILDLIFE TRUST OFFICES, LLANDRINDOD WELLS, POWYS. 11:00 – 16:00

NORTHERN IRELAND

1 & 2 August 2009 *Moth recording training weekend* led by Dave Allen. LOUGH MELVIN HOLIDAY CENTRE, GARRISON, CO. FERMANAGH. 14:00 Saturday until 12:00 Sunday. (£20 fee for accommodation and food to be paid on booking.)

5 & 6 September 2009 *Moth recording training weekend* led by Dave Allen. MAGILLIGAN FIELD CENTRE, LIMAVADY, CO. LONDONDERRY. 14:00 Saturday until 12:00 Sunday. (£20 fee for accommodation and food to be paid on booking.)

ISLE OF MAN

20 June 2009 *Introduction to moths* led by Steve Palmer. KNOCKALOE FARM, PATRICK, NR PEEL, ISLE OF MAN. 10:00 – 15:00. Advanced booking essential (no later than 10 June) via Richard Selman 01624 843109 or Richard.Selman@gov.im

Three Months Free Membership of Butterfly Conservation!

Butterfly Conservation is delighted to offer all new members 15 months' membership subscription for the price of 12 - that's three months free when you **join online** by direct debit paying annually or monthly.

This is a fantastic opportunity to belong to the UK charity working to conserve moths, butterflies and their habitats and receive some excellent benefits including:

- A new member pack
- A personalised membership card
- **Butterfly**, our exclusive magazine packed with moth and butterfly information three times a year
- Garden moths and caterpillar leaflets
- Membership to your local branch
- Access to our nature reserves across Britain

To become a member, simply visit the Moths Count website (www.mothscount.org), click support us and follow the link to become a member. Click the **JOIN NOW** button, choose the online (direct debit) payment method and follow the on-screen instructions.

If you encounter any problems or have any questions about this offer then please contact our Membership Officer Hannah Cooper on 01929 406017 or hcooper@butterfly-conservation.org

Moths on the move

How far do moths travel? It sounds like a simple question, but there is very little information about moth dispersal and mobility. We know, of course, that some moths can migrate over vast distances. Many species, ranging from the tiny *Plutella xylostella* to the relatively enormous *Convolvulus Hawk-moth* travel across land and sea each year to reach our shores from as far afield as the Mediterranean and North Africa. But what about our resident species?

The limited evidence suggests that even among populations of highly sedentary moths, in which the average adult might move only a few tens of metres from where it emerged, there are a few individuals (typically a very small proportion of the population) that will disperse over much longer distances. Work on burnet moths in Scotland has shown this pattern.

Recently, several mark, release, recapture (MRR) experiments have been conducted on moths. These have started to shed some light on these rarely-observed movements. For example, large-scale MRR studies have been undertaken in Sweden on the Narrow-bordered Five-spot and New Forest Burnet moths. The results showed that the average movements between captures were quite small (less than 100m), which fits with the perceived wisdom that these are 'sedentary' species.

However, several much longer movements were recorded. One Narrow-bordered Five-spot Burnet had travelled 3½km and a New Forest Burnet was recaptured 5½km from where it had been marked!

Closer to home, Dr. Thomas Merckx and colleagues at Oxford University have carried out MMR studies on nocturnal species as part of their research into farmland moths (which was mentioned in last year's newsletter). They recorded several common species travelling more than 1km between captures, including the Large Nutmeg, Heart & Dart, Scalloped Oak and Setaceous Hebrew Character. Others, such as Brown-line Bright-eye, Treble Lines and Common Swift, moved more than 900m. An even bigger MMR study at Wytham Woods near Oxford is planned for this summer, led by Dr. Eleanor Slade.



In addition, you can get involved in the hunt for marked moths on National Moth Nights in September (see article on p.09).

With such work and the development of new technologies to study moth movement (such as Rothamsted's vertical-looking radar) the mysteries of moth mobility are gradually being revealed.



Funding to target 'white holes'

Visiting under-recorded areas can be exciting and rewarding as well as helping to fill in blank areas, 'white holes' on distribution dot maps. The British Entomological and Natural History Society (BENHS) is again offering grants from its Maitland Emmet BENHS Research Fund to contribute towards travel and subsistence expenses for moth recorders wishing to visit under-recorded 'white holes' for the National Moth Recording Scheme in 2010.

John Armitage applied for BENHS funding last year and has embarked on a series of moth recording visits on the Isle of Jura during 2009. On his first trip in May John recorded very few moths as it was quite cold. Nevertheless, his sightings of Poplar Hawk-moth, Buff-tip and White Ermine represent new records for Jura, compared with maps published previously in the Moths and Butterflies of Great Britain and Ireland series.

"It was really great to get out into some unexplored moth territory despite the heavy rain and even hail showers!" said John who is County Moth Recorder for vice-county 102. For 2010, BENHS have kindly made a total of £1000 available for targeted moth recording. The amounts awarded reflect what an amateur might expect to spend on travel and accommodation. Applications need to be made in the usual way (see www.benhs.org.uk/srf.html) but should also be accompanied by a statement of support from the local County Moth Recorder(s) confirming that the area to be visited is unrecorded or severely under-recorded for macro-moths.

Grants are awarded in December for work to be carried out the following year. Applications need to be with Dr. J. Muggleton, 17 Chantry Road, Wilton, Salisbury SP2 0LT, by 30th September.

National Moth Night

Last year's National Moth Night (NMN) organised by Butterfly Conservation and Atropos took place on 7 June and was the 10th anniversary event. There were three target species, *Anania funebris*, Narrow-bordered Bee Hawk-moth *Hemaris tityus* (both of which are UKBAP priority species) and the presumed-extinct Bordered Gothic *Heliophobus reticulata*.

For the first time ever a target habitat, orchards (a UKBAP priority habitat) was introduced. This was well received by moth recorders. A 'headline' finding of NMN 2008 was the rediscovery of the White Prominent *Leucodonta bicoloria* in Ireland. A full account of its rediscovery can be found in the autumn 2008 issue of *Atropos*.

Migrant moth numbers remained low compared to the exceptional immigrant year of 2006. On NMN 2008 Silver Y *Autographa gamma*, Diamond-back Moth *Plutella xylostella* and White-point *Mythimna albipuncta* (now considered a resident in some areas) were the most common migrants in both abundance and distribution.

The popularity of NMN has continued to increase. Participation in NMN 2008 improved substantially over previous years; we estimate that around 1200 people recorded moths at 1020 sites. Almost 19,000 records were received for just over 800 moth species compared to just over 13,000 records of 746 species from 458 sites in 2002, the last time NMN was held in June.

Last year many public moth events were run and were attended by over 700 people. All this goes to show that during its 10th anniversary year NMN continued to fulfil the aims of recording and promoting moths for which it was originally conceived.

The results are not all good news, however, and NMN records support the general perception of 2008 being a terrible year for moths. For example, in 2002 an average of 15 Heart & Dart *Agrotis exclamatoris* per site were trapped

compared to only 4.5 per site in 2008. Of course, NMN is only a snap-shot of one night and any comparison between years should be interpreted with caution. The full results of NMN 2008 will be published in *Atropos* later in the year.

Many recorders are now using the official recording templates for their NMN records, for which we are very grateful. By using these templates you are helping us to reduce the time taken to input the data, thereby enabling us to spend more time working to conserve moths! For NMN 2009 please use the recording forms as published on the NMN website (www.nationalmothnight.info). We cannot guarantee to include records that are sent in different formats.

The date for NMN 2009 is set for 18–19 September with migration being the main theme over the two nights instead of specific target species. Recording can be carried out on either night or both, so there is more opportunity than ever to get out and record somewhere new. Another exciting and new feature for NMN this year is that we will be undertaking a marking experiment to learn more about moth migration and mobility.

At designated locations around the country, moths will be marked in a simple and harmless way in the days leading up to NMN, in the hope that they will be caught by moth recorders during the event. Will you find a marked moth in your trap? So little is known about the mobility of moths that any recaptures will be extremely exciting and important.



A marked Striped Hawk-moth (M. Tunmore)

Full details will be made available at www.nationalmothnight.info in due course. If you are organising a public event that you would like to include on the website please send details to events@nationalmothnight.info



Moth Guides

Whether looking to buy your first moth book or seeking to update a well-thumbed library, moth recorders are spoilt for choice when it comes to field guides at the moment. Three have been published over the past six months which cover the macro-moths of Britain and Ireland. One is a new photographic guide by Chris Manley, which also covers almost 500 micros, and the other two are revised and updated editions of the popular 'standards'. Details of the three are:

Manley, C. (2008). **British moths and butterflies. A photographic guide.** A&C Black.

Skinner, B. (2009). **Colour identification guide to the moths of the British Isles.** 3rd edition, Apollo Books.

Waring, P. and Townsend, M. (2009). **Field guide to the moths of Great Britain and Ireland.** 2nd edition, British Wildlife Publishing.

Happy reading!

Grey Carpet to benefit from first landscape-scale conservation project for moths

The Breckland area of Norfolk and Suffolk is famous for its moths and includes species not seen elsewhere in the UK including the Grey Carpet and Basil Thyme Case-bearer. The presence of bare ground is an important feature of heathlands and dry grasslands and is vital for many scarce moths and plants, including the Grey Carpet, which is now a Priority Species in the UK Biodiversity Action Plan.

Historically a 'breck' was an area of land that was temporarily cultivated, then allowed to revert to heath once the soil became exhausted. Breckland is the driest part of Britain and sand storms were once a regular occurrence. In recent years management by sheep grazing and mowing combined with some very wet summers has contributed to a decline in bare ground on Breckland.

A SITA Trust grant 'Conserving the Grey Carpet Moth' awarded to Butterfly Conservation is helping to reverse this trend by funding the creation of over 40 bare ground plots at 14 different sites across the Brecks landscape. There are five different treatments being used; turf stripping, forest plough, agricultural plough, rotovation and disc harrow. Turf stripping is the most dramatic treatment and involves removing up to 10cm of topsoil and either taking the soil away from the site, as at Cavenham Heath, or creating a low bank along forest rides.

The forest plough treatment creates two ridges of bare soil up to 25cm high with a patch of undisturbed vegetation in the middle. There is good scope for several micro-habitats in the sheltered ridge and furrows created. Rotovation creates extensive areas of disturbed soil with fragments of vegetation including grass tussocks and germination sites ideal for small Breckland plants and annuals. Most of the plots are 150 metres long and 3 metres wide although some are much larger.

This project will include moth and butterfly surveys and vegetation monitoring throughout the spring and summer of 2009 at plot sites. Survey work also includes several sites with agri-environment schemes such as cultivated margins. This will provide a much better indication of the distribution of moths and butterflies in the Brecks and the value of bare ground.

There are many moths and butterflies that might benefit from this type of habitat management. The flagship species for this landscape-scale conservation project is the Grey Carpet, whose caterpillars feed on Flixweed growing in disturbed soils and field margins. In addition, survey work by Gerry Haggett on the Basil Thyme Case-bearer, a micro-moth found only in the Brecks of Norfolk and Suffolk, confirmed that creating bare ground was essential for the species' survival. In 2008, the largest ever numbers of the moth were recorded along scarified rides at King's Forest.

Surveyors will also be on the look out for Marbled Clover, Tawny Wave and Forester, a new UKBAP Priority species. In the longer term Dingy Skipper and Grizzled Skipper butterflies could also benefit from the short turf and abundant flowers that will eventually cover the bare soil. The Moths Count project is holding a free training event entitled an *Introduction to the Day-flying moths of Breckland* on 21 June 2009 so why not come along and see why this is such an important landscape (see centre pages for details).

Sharon Hearle
East of England Regional Officer,
Butterfly Conservation



Grey Carpet (S. Hearle)



Tawny Wave (N. Sharman)



Soil stripping in Breckland (S. Hearle)

STOP PRESS

Habitat creation undertaken as part of the project is already benefitting rare Breckland moths. Both the Grey Carpet and Marbled Clover appear to have colonised management plots that were only created (by rotovation) in March this year!

Welsh Clearwing

Synanthedon scoliaeformis - An update on its status in Britain

As recently as 1988 the Welsh Clearwing was regarded as an extreme rarity in Britain, persisting only in a few remote sites in Scotland and Ireland, and quite possibly lost from England and Wales. After all, there had been no records from the latter two countries for 68 years with the last report being from Cannock Chase, Staffordshire in 1920.

However, in 1985, volume 2 of *The Moths and Butterflies of Great Britain and Ireland* predicted that "systematic field-work should lead to the rediscovery of this species in the country whose name it bears". Shortly afterwards (June 1988), the moth was indeed rediscovered, by chance, near Dolgellau in North Wales. P.A. & P.M. Burnham happened to spot an adult moth and confirmation came on follow-up visits when Adrian Fowles (and others) found pupal exuviae extruded from nearby birch trees.

Since then the moth has been shown to occupy a large part of southern Merionethshire and adjacent northern Montgomeryshire – an area amounting to over 600 square kilometres. Within this region the moth can be expected in any suitable habitat with the best sites containing hundreds of tenanted birch trees. However, no evidence has yet turned up for the presence of the Welsh Clearwing in other parts of Wales, despite targeted surveys.

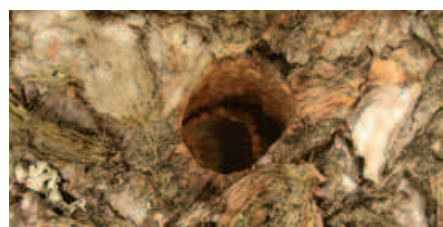


Welsh Clearwing pupal case left and emergence hole right (A. Graham)

The rediscovery of the moth in England came as recently as 2005 when I visited Cannock Chase and soon found that some of the birches showed signs of past occupation. This chance observation has been followed up by two thorough surveys for Butterfly Conservation by David Green. These demonstrated that the Cannock Chase metapopulation is large and thriving, with over 300 tenanted birch trees located.

Last year (2008) saw the exciting and very welcome discovery of a second English site in Sherwood Forest, Nottinghamshire - a totally new locality for this species. This was another chance event; Gary Joynt, a Forest Ranger, was lucky enough to catch an adult moth, which was identified by himself and Andy Borroff, and later confirmed by Sheila Wright, the County Recorder. A Moths Count workshop is being held at Sherwood Forest this summer to promote awareness, survey and conservation of the species.

In Scotland, there are recent records from four sites including the traditional localities near Loch Rannoch and in the Trossachs. Little effort has been devoted to searching elsewhere. The most recent Irish records are from County Kerry in 2005.



This brief account suggests that this moth is all too easy to overlook and it follows that there remains a strong possibility that further sites await discovery. The best way to attempt this is simply to remember that old birch trees with unshaded trunks are of special interest and are worthy of close examination. Such trees are common in upland Britain and also on heathland sites in the lowlands.

If 5mm diameter, circular section tunnels are seen in the sound bark of any such tree then that is extremely good evidence for the presence of the Welsh Clearwing. These tunnels can only be seen where they intersect the bark surface, i.e. where the moth has actually emerged from its pupa.

The presence of a cocoon a short way down the tunnel and/or of a pupal case provides definite proof that the moth was there. An alternative, much less efficient but probably more appealing method is to use the 'Sco' pheromone lure which has proved very effective in attracting male moths. The drawback of this approach is that it is applicable only on warm, sunny days during the flight period.

Further information is available from Butterfly Conservation. Please do look at old birch trees wherever you happen to be and get in touch if you think you may have found any of the signs mentioned above.

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Moth Trap By-Catch

Have you ever wondered about the other insects that end up in your moth trap? As dusk turns to night among the first insects to the lighted sheet or trap will be, not Lepidoptera, but their sister insect orders the Trichoptera and the Ephemeroptera, or Caddisflies and Mayflies to use their common names. These can be very common in moth traps, especially if run close to water.

There are recording schemes for both of these groups of insects and your moth trap by-catch can contribute towards the forthcoming Caddisfly distribution atlas or help ecologists understand the impact of climate change on Mayfly flight periods.

Both recording schemes will accept good quality photographs by email (together with your name, the date, time and location (6 figure grid reference or postcode) of the sighting). Both schemes will also accept specimens by post, but please contact the co-ordinators first to check on the required methods of preservation and labelling.

National Trichoptera Recording Scheme

c/o Ian Wallace
 World Museum Liverpool,
 William Brown Street, Liverpool, L3 8EN
ian.wallace@liverpoolmuseums.org.uk

Ephemeroptera Recording Scheme

c/o Craig MacAdam
 Bradan Aquasurveys Ltd.
 PO Box 21659 Larbert, FK5 4WX
info@ephemeroptera.org.uk
www.ephemeroptera.org.uk



Glyphotaelius pellucidus
The Mottled Sedge
 It has an unmistakable combination of mottled wings with a scalloped margin. This specimen was found in a moth trap. (J. Sirrett)

Moths Count Project Contacts

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Moths Count team left to right; Richard Fox, Laura Wiffen, Susan Anders, Zoë Randle and Les Hill (L.Stuckey)

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Moths Count is a partnership of many organisations, individuals and businesses, led by Butterfly Conservation. Principal funders include the Heritage Lottery Fund, Butterfly Conservation, British Entomological and Natural History Society, City Bridge Trust, Countryside Council for Wales, Environment Agency, Natural England, Northern Ireland Environment Agency, Royal Entomological Society, RSPB and Scottish Natural Heritage. Many other organisations are involved, providing support and helping to host events. Full details at www.mothscount.org

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Butterfly Conservation
 Saving butterflies, moths and their habitats



Environment Agency

