Wider Countryside Butterfly Survey Annual Newsletter 2020 Season

Silver-washed Fritillary by Andrew Cooper

Compiled by the WCBS team – Megan Lowe, Ian Middlebrook (BC), Sarah Harris, David Noble (BTO), Marc Botham, David Roy (UKCEH), Anna Robinson and Kirsi Peck (JNCC).

Welcome to the WCBS

The Wider Countryside Butterfly Survey (WCBS) forms part of the UK Butterfly Monitoring Scheme (UKBMS) which generates high quality data on the population status of common and widespread butterflies. The WCBS comprises a network of randomly selected 1km squares sampled at least twice a year. Recorders count butterflies using conventional transect criteria along two 1km long survey lines, which run parallel within the square. This newsletter presents initial results from WCBS squares in 2020, based on changes in species occurrence. The full population trend results, from all component surveys of the UKBMS were published as Official Statistics in late March and are available via the UKBMS website. The WCBS is jointly run by Butterfly Conservation (BC), the UK Centre for Ecology & Hydrology (UKCEH), the British Trust for Ornithology (BTO) and the Joint Nature Conservation Committee (JNCC).

Coverage in 2020

2020 was an unprecedented and difficult year for most. As the Coronavirus pandemic swept across the UK, we were all placed under tight restrictions. In line with the Government guidance, the UKBMS paused all monitoring activity during the Spring, with travel restrictions still in place in certain regions up until July.

There's no doubt Coronavirus had an impact on the coverage of the WCBS in 2020, but thanks to the dedication of recorders who were able to make their visits safely, this impact has been relatively minimal.

Over the 2020 season a total of 717* squares were surveyed, a decrease of 14.5% (-112 squares) on the 2019 total. This is the fewest number of squares surveyed in the Scheme since 2010, when 690 squares were covered. Both the BTO Breeding Bird Survey (BBS) and Butterfly Conservation (BC) squares suffered declines in coverage with 466 BC squares (-52 compared to 2019), and 251 BBS squares (-60) surveyed. BBS suffered their poorest year in the series in terms of square coverage for the WCBS.

Looking at coverage by Country there were a total of 640 squares surveyed in England (-89 compared with 2019), 47 in Scotland (-1), 18 in Wales (-13), 11 in Northern Ireland (-9), and one on the Isle of Man (same as 2019).

Although this decline in coverage may seem disappointing at first, this is a fantastic achievement in a year full of restrictions, social distancing, and self-isolation. A huge thank you to all recorders involved, and to those who continue to support the scheme but were not able to visit their square(s) this year. We hope to welcome you back in 2021.

**records submitted to the Scheme before 8th December 2020.*

Regional Coverage

The top three BC Branch areas with the greatest number of squares covered during 2020 were Dorset with 64 (59 BC and 5 BBS), Gloucestershire 51 (42 BC and 9 BBS), and Hampshire and Isle of Wight 47 (35 BC and 12 BBS). All three of these areas remain popular with BC recorders, while survey coverage by BBS volunteers remains greatest in Sussex, where 29 BBS squares were surveyed (same as 2019). Gloucestershire had the greatest increase in surveyed squares compared to 2019; a total of 7 (4 BC and 3 BBS). Norfolk also saw a welcome increase with 6 more BC squares surveyed than in the previous year. The West Midlands area continued to see a growth in BBS squares covered with a total of 20 BBS surveyed for butterflies this year (3 more than 2019).

Many Branch areas struggled with coverage this year, most likely due to the Coronavirus pandemic, resulting in seven Branch areas suffering their poorest coverage in the series. In contrast, and defying all Coronavirus odds, two Branch areas (Dorset and Gloucestershire) had their best years in the series in terms of number of squares surveyed.

Ringlet by Andrew Cooper

2020 SURVEY

Results overview

In total 1,595 surveys were made in 2020, by approximately 540 recorders. 100,996 butterflies of 48 species were counted over a combined length of 3,190km. The species count comprised of 20 habitat specialists (two more than 2019), 25 wider countryside species, and the three regular migratory species: Red Admiral, Painted Lady, and Clouded Yellow.

Marsh Fritillary, Purple Emperor, and Silver-spotted Skipper were recorded in the WCBS this year, but were absent from the 2019 survey, whilst the reverse was true for Duke of Burgundy.

There were 224 spring visits to 154 squares (113 BC and 41 BBS) with Orange-tip recorded in 43 squares and Green Hairstreak in 4.

The overall busiest day for recording was Sunday 12th July when 95 visits were made, recording 13,269 butterflies of 32 species. The most visits to a BC square was 15 in South Norfolk, closely followed by 14 visits to a square just south of Cambridge. The most visits to a BBS square was 7 in Allington, Wiltshire.

Throughout the core July and August recording period 557 squares (78% of the total; -7 percentage points compared to 2019) received the required two visits. During these 1,114 visits, 70,834 butterflies of 44 species were recorded (the same number of species as 2019).

An average of 63 butterflies were recorded per WCBS visit

Eighteen wider countryside species (two fewer than 2019) achieved target 'good' coverage (detected in 100 or more squares), whilst a further six species had 'adequate' coverage (found in 30 – 99 squares).

Of the 25 wider countryside species, 48% were more widespread than in 2019 (Table 1). Meadow Brown maintained the top spot as the most widespread butterfly in 2020, occupying 89.4% of WCBS squares during the core July and August recording period. Small White was a very close second occupying 88.9% of squares. Holly Blue (+13 percentage points) and Peacock (+12) both saw the largest increases in occupancy compared to 2019, recording their best years in the WCBS series. Gatekeeper also achieved its best year in the series in terms of occupancy.

The three wider countryside species that had the largest decreases in occupancy were Ringlet (-11 percentage points), Speckled Wood (-9), and Large Skipper (-9).

All three regular migrant species also saw decreases in their occupancy compared to 2019. Following the mass influx last year, Painted Lady occupied just 6% of squares (-67 percentage points) in 2020, the lowest occupancy recorded since 2012. Clouded Yellow and Red Admiral saw minor decreases of -1 and -3 percentage points respectively.

Of the 16 habitat specialist species recorded in the WCBS during July and August Silver-washed Fritillary was the most widespread being detected in 12.6% of squares. This was also its best year in the series in terms of occupancy.

Country Level Results

During the core July and August recording period a total of 504 squares surveyed in England, 34 in Scotland, and 9 in both Wales and Northern Ireland met the criteria of at least two visits. Unfortunately, the number of squares meeting the survey criteria were too low in Wales and Northern Ireland to make any meaningful comparison at the Country-level.

In England, Small White took the top spot for most widespread butterfly, occupying 93% of squares. Meadow Brown was a close second occupying 92%. Peacock and Holly Blue saw the biggest annual increase in occupancy of English squares, both being up by 15 percentage points. Whereas the Painted Lady and Ringlet saw the greatest reductions in annual occupancy in England by -64 and -12 percentage points respectively.

By contrast, in Scotland, Ringlet was detected in 74% of squares taking the top spot for the most widespread butterfly here. It also saw one of the greatest increases in occupancy of Scottish squares compared to 2019 (+8 percentage points), only beaten by the Scotch Argus which showed an increase of +10 percentage points.

Perhaps unsurprisingly the Painted Lady showed the greatest reduction in annual occupancy of all species across all countries after it's mass arrival in 2019.

Top Counts

The three largest butterfly counts on 2020 surveys were: 468 Meadow Brown on 23rd June in a square near Witchampton, Dorset; 450 Meadow Brown on 12th July near Battisford, Suffolk and 416 Meadow Brown on 22nd June near Hare Street, Hertfordshire.

In Scotland the maximum butterfly count was 204 Scotch Argus on 18th August in a square near Aultbea in the Highlands. In Northern Ireland it was 78 Green-veined White on 11th August near Douglas Road, County Antrim; and in Wales the top count was 95 Meadow Brown near Llanfynydd, Flintshire on 12th July.

Holly Blue by Iain Leach

After a large decrease in occupancy in 2019, Holly Blue bounced back to have their best year in the WCBS series

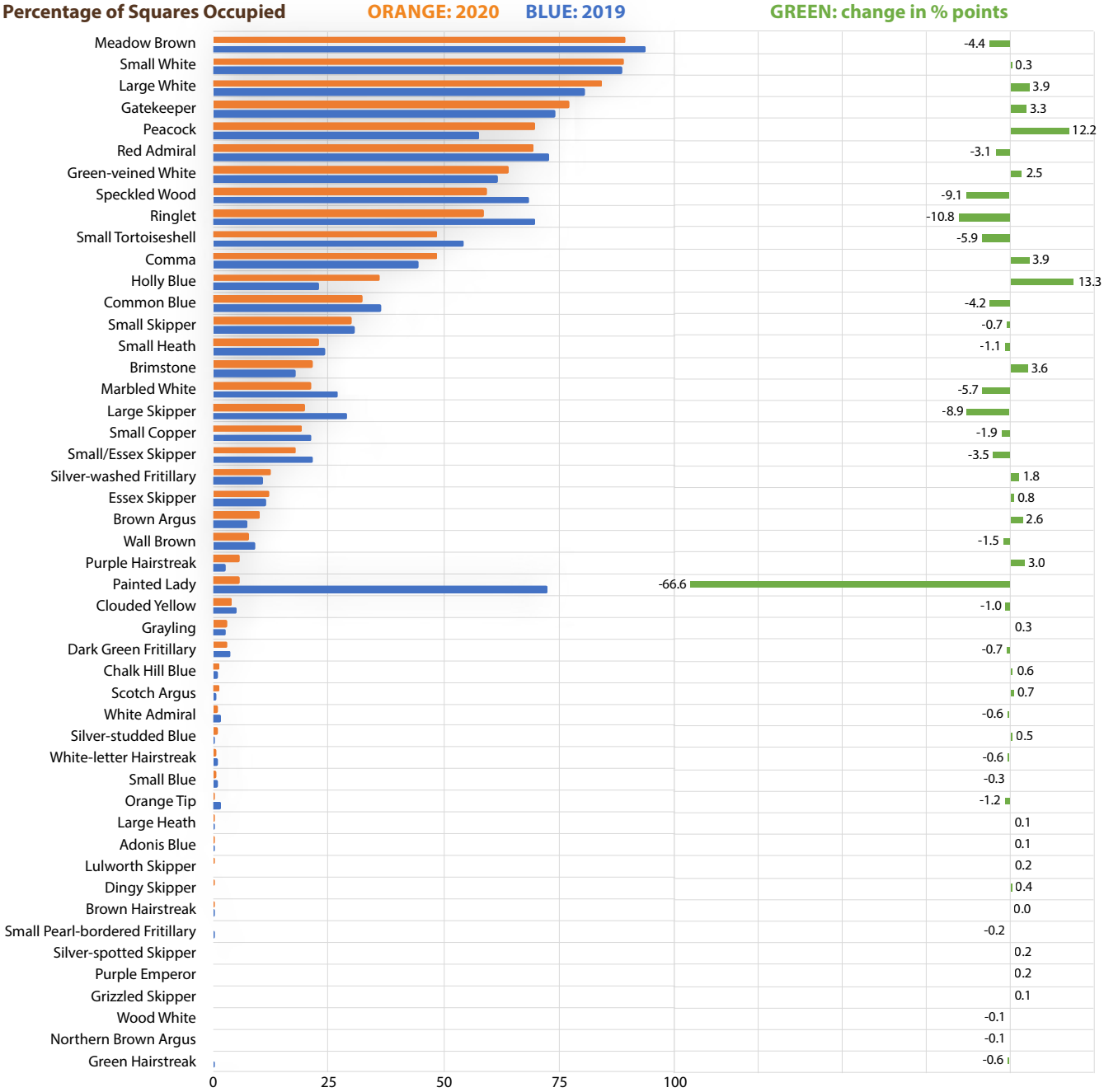
Habitat Specialists

The maximum habitat specialist count was 165 Silver-studded Blue in a square near Boldre, Hampshire on 2nd July. Other notable habitat specialist counts included 57 Silver-studded Blue on 23rd June near Burley in the New Forest; 56 Grayling near Hartfordbridge, Hampshire on 17th July; and 54 Marsh Fritillary on 20th May near Heytesbury, Wiltshire.

Pioneering Visits

63 squares received their first ever survey as part of the WCBS in 2020. Of these, 14 (5 BC, 9 BBS) had no previous butterfly records (as per Butterfly Conservation's Butterflies for the New Millenium (BNM) dataset). These pioneering visits generated records for 23 species, including Scotch Argus, Purple Hairstreak, and Dark Green Fritillary. Out of these newly visited squares the two that recorded the most species were in Netherton in the West Midlands (16 species), and near Exton in Hampshire (13 species).

Table 1: WCBS Annual Results; butterfly occurrence on WCBS squares in 2020 in comparison to 2019 (using data from squares sampled twice between July and August).



Moths

Day-flying moths were recorded in 127 squares (81 BC and 46 BBS), which equates to 18% of all squares surveyed (-4 percentage points compared to 2019). In total 737 moths of 58 species (23 more species than in 2019) were recorded. The Silver Y was the most numerous moth, accounting for 23% of all moths seen. It was also the most widespread being recorded in 43% of these squares (+5 percentage points compared to 2019).

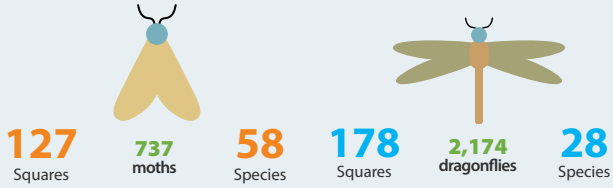
Cinnabar was the second most widespread moth, being counted in 21% of squares that reported moths. Other moth species that were commonly encountered include Yellow Shell, Shaded Broad-bar, and Six-spot Burnet.

Dragonflies

Dragonflies were recorded in 178 squares (25% of all squares surveyed, one fewer percentage point than in 2019). A total of 2,174 individuals of 28 species (four more than in 2019) were counted. Common Darter was the most widespread dragonfly for the fifth year in a row. It was recorded in 38% of squares that reported dragonflies (three fewer percentage points than 2019). Southern Hawker took second place in terms of occupancy, being found in 34% of these squares, and Brown Hawker third in 33% of squares.

Other Species

Through the UKBMS website it is now possible to record a multitude of taxa spotted on your WCBS. In 2020 other wildlife recorded on WCBS squares included 46 bird species, 11 mammals, 15 species of hoverfly, 11 other insect species including beetles and bees, and one amphibian. These data go into the iRecord database for verification and are made available to the relevant national recording schemes.



Priorities for improving coverage 2021

Of the 31 BC Branch areas, understandably, only 7 areas managed to achieve good coverage (more than 30 squares sampled) of WCBS squares in 2020. These were: Bedfordshire and Northants, Dorset, Gloucestershire, Hampshire and the Isle of Wight, Norfolk, Surrey and SW London, and Sussex.

A key priority for 2021, Covid-permitting, will be to increase coverage back to the level achieved in recent years. Squares with mid to long datasets should be given priority, particularly those that missed being surveyed in 2020.

The BC Branch areas most in need of surveyors are Lincolnshire, Warwickshire, South Wales, Yorkshire, and Devon. These areas are all classed as 'high priority' due to consistently low or declining coverage.

Squares with long data-runs

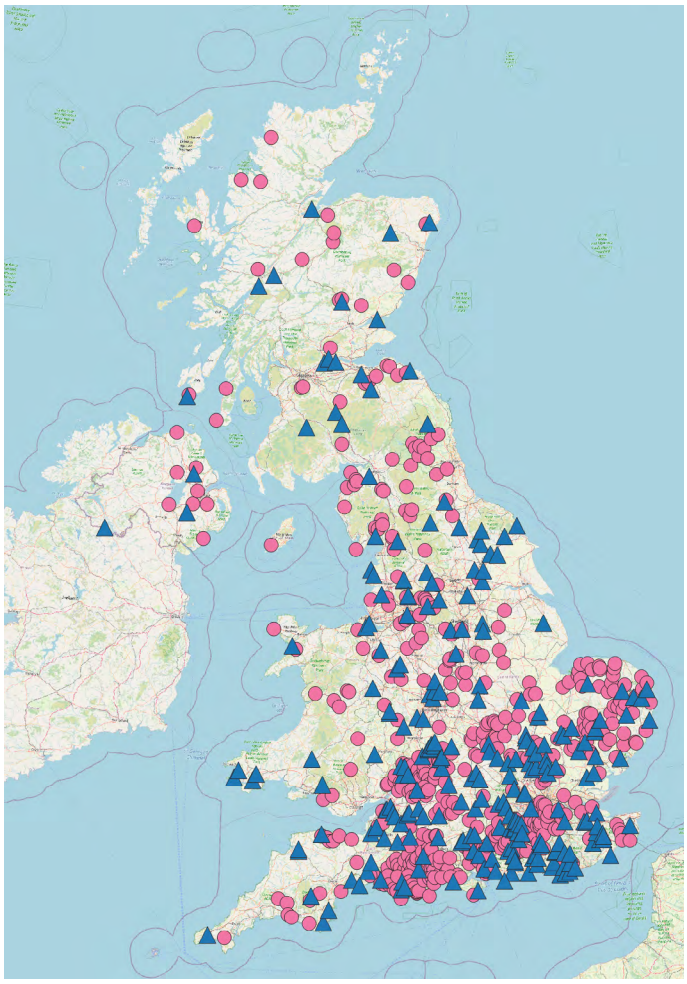
There are 17 BBS squares with data-runs of 10 or more years which are currently not being monitored. These occur in Cheshire; Devon; Glasgow and South West Scotland; Kent; Lincolnshire; Norfolk; North Wales; Suffolk; Surrey; South West London; Upper Thames; West Midlands and Yorkshire. If you are interested in re-activating any of these squares please contact Sarah Harris (see 'Getting Involved' page 8).

There are also 10 BC squares with data-runs of 10 years or more that have not received any visits since 2018. They occur in Cambridgeshire; Dorset; East Scotland; Norfolk; Suffolk; and Sussex. If you are interested in taking on any squares please contact the relevant WCBS Champion (see 'Meet the Team' page 9) or contact BC's WCBS Co-ordinator (see 'Getting Involved').

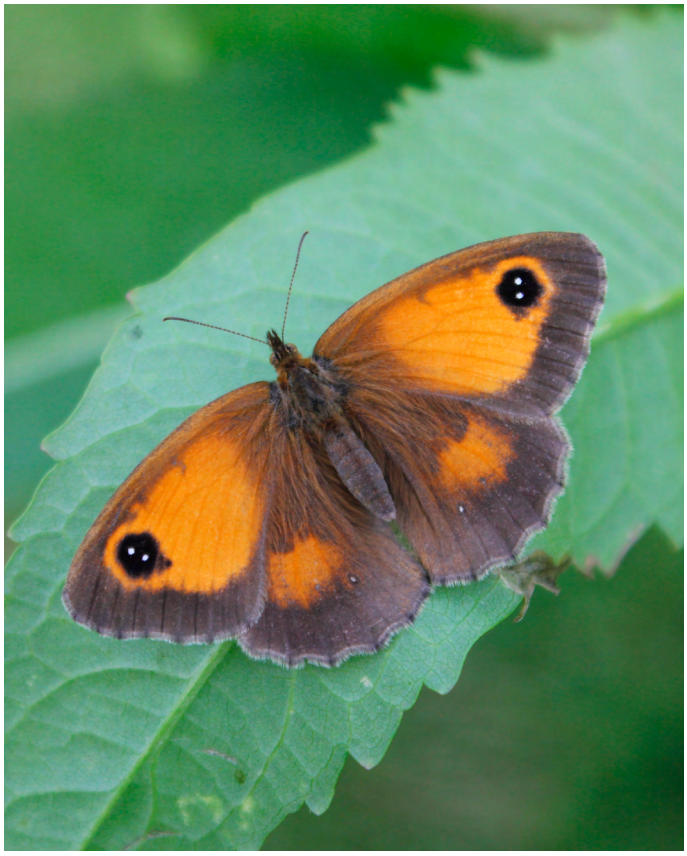
Table 2: An example of BC squares currently available:

Square	Branch	Location	No. years surveyed
NY0935	Cumbria	West of Tallentire, Cumbria	6
ST8518	Dorset	Twyford, Dorset	10
ST7703	Dorset	Ansty, Dorset	6
NO0460	East Scotland	Kindrogan Wood, Perth and Kinross	New
NT1930	East Scotland	Manor Water, Scottish Borders	New
SD7224	Lancashire	Near Blackburn	8
TF9040	Norfolk	Wells-Next-The-Sea, Norfolk	11
SN9331	South Wales	Pentrefelin, Powys	7
SU9150	Surrey and SW London	Ash Green, nr Aldershot, Surrey	2
SU9951	Surrey and SW London	Bellfields, Guildford, Surrey	New

Figure 1: WCBS Coverage in 2020.



BC squares surveyed **BBS squares surveyed**



Gatekeeper by Megan Lowe

Holiday squares

Planning a holiday to North West England, North East England, Scotland, Wales, or Yorkshire this summer?! Although popular holiday destinations, these regions struggle with WCBS coverage due to the remote nature of many of the squares. 'Holiday Squares' aim to increase this coverage by making it easier for potential recorders to sign up to a square in an area of countryside they would like to visit. These squares are a great excuse to explore new areas whilst contributing valuable information.

In 2020, a total of 28 holiday squares were surveyed (21 more than in 2019), with at least four now taken on by longer-term recorders. Eight of these squares had never been surveyed previously as part of the WCBS; these were in North Wales, Northumberland, and the Scottish Highlands.

How to sign up to a square:

To view and sign up to a holiday square login to your UKBMS account and visit the 'Holiday Squares' webpage. Here you can use the map to zoom in to the area you are visiting, view the squares available, and assign yourself to survey a square(s). Once assigned you will receive an email with more details about the square and any existing route information.

Furthermore, holiday squares can be shared by surveyors so if you can only visit once, someone else could cover the second visit.

There are also opportunities to complete one-off surveys on the BBS 'Upland Rovers' squares. These squares can change year to year so to find out more check out the locations on the Upland Rovers map and then contact Sarah Harris (see 'Getting Involved' page 8) to be allocated the square for one season only. Note, the map application is only available to BBS bird surveyors; please contact Sarah directly if you are interested in being involved.

Here is a sample of what is on offer:

NT0923, Tweedsmuir Wood, Scottish Borders

Last surveyed in 2016, there are several forestry tracks and a minor road running through this square. It is also home to a small group of three standing stones including The Giant's Stone.

Photo credit: Jim Barton

SN8487, Hafren Forest, Llanidloes, North Wales

This square is conveniently located a short distance away from Hafren Forest car park. It features multiple footpaths including two national trails; the Wye Valley Walk and the Severn Way. Hafren Forest is the source of the River Severn (or Afon Hafren in Welsh), which runs through this square.

Photo credit: Kevin Skidmore

NY1612, Pillar Mountain, above Ennerdale Water, Lake District

One for the adventurous and experienced mountain walkers, this square will reward you with great views on the way up and down Pillar Mountain.

Photo credit: Matthew Hatton

Brimstone by Megan Lowe

YOUR WCBS

Pam Hardeman shares a few words of her experiences on her butterfly walks at Brackfield near Derry N.Ireland

I had been shielding for around 12 weeks when I got the go ahead to start my weekly transects from Butterfly Conservation and Woodland Trust.

Purple Hairstreak by Pam Hardeman

The walk takes me through meadows alongside the River Faughan and up through woodlands and it always lifts my mood seeing kingfisher, dippers and grey wagtails on the riverside and buzzards soaring above. I met one lady nearly every visit who was out getting her daily exercise, and she would delight in telling me of any butterflies she had seen on her walk.

The experience of the year happened late July when I set out on a fairly windy day with only 50% sunshine not really expecting to see much. I always have my camera with me and photograph any butterflies or moths found along my way. I was taking a photo of a Speckled Wood on bramble at the end of my walk when another butterfly flew in close by - imagine my shock when it opened its wings and showed off the purple wings - yes a purple hairstreak!! It was so exciting as I knew they are not normally seen at low levels

Small Copper by Pam Hardeman

and certainly not in the middle of the day. I did of course report the sighting and was amazed it was the only record on a transect this year in Northern Ireland.

I enclose the photo I took at the time and of a Small Copper that landed on my recording sheet on one of my other walks - another amazing experience!

David Phillips - highlights from a strange and unprecedented year

I survey two WCBS sites. My Yorkshire site is located near Dalton-on-Tees in North Yorkshire. It is a mixed farm but with a predominate arable base. It has a small but healthy inland Wall Brown population. Brown Argus has spread northwards and occurs with increasing frequency. Just outside the survey area but still on the farm, I have seen a few Purple Hairstreak which represents the most northerly Yorkshire population. I discovered these during a survey in 2019. A single Painted Lady graced the farm in late Summer.

My other site is an arable and sheep farm set between the Tees Valley and the Durham uplands NW of Darlington. It held 47 Small Tortoiseshell on two small buddleia bushes during August. Three Wall Brown were also seen at this inland upland site. The first appearance for a few years.

My main highlight though came from my Big Butterfly Count in Darlington when my grand-daughter, who is 11 years shouted "Grandad I have got Holly Blue". I turned and looked round to find the butterfly perched on her foot and then on her sandals. Next year, I may try painting my toe nails blue to attract this enigmatic species!

Holly Blue on a flip-flop by David Phillips

YOUR TWEETS

Tweet us @WCBSLive

Geoff St @grs_st

21 species recorded today in the lovely weather, the hedgerows were positively alive with Butterflies and other insects. Comma, small/Essex? Skipper and a real joy to see a White Letter Hairstreak @ukbutterflies @savebutterflies @StaffsInverts @WCBSLive

Suffolk Butterflies @BillButterfly

Super walk this morning around my @WCBSLive square near Battisford, Suffolk. Nearly 200 Peacock counted and great to see 8 Silver-washed Fritillaries. Bonus species of Purple Hairstreak too.

Nathan Jones @NathanJones81

Sweltering by 10am with the butterflies already seeking out shade. Melting walking @WCBSLive squares with @PaoloFarina19. Highlights of over 100 Common Blues, prolific egg-laying and a brilliant view of an exotic Jersey Tiger on the wing @BCKentBranch

NEWS

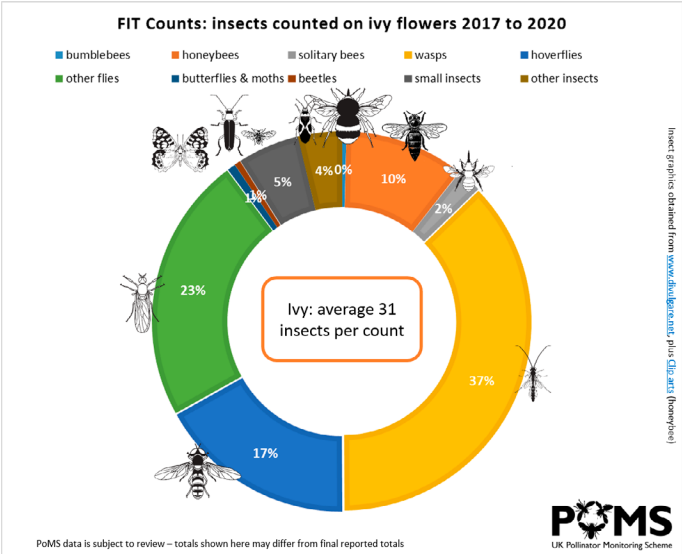
New UKBMS website

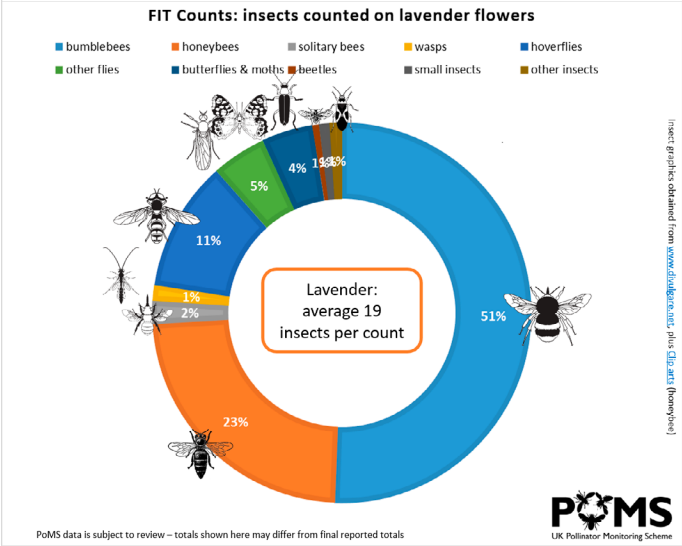
The eagerly awaited new-look website was launched earlier this month, just in time for the 2021 season. The website has all the same features as before but is running on an upgraded system that we hope will be slightly easier and quicker to use. New guidance is now available and can be found on the UKBMS website.

News from the Pollinator Monitoring Scheme

As partners in the UK Pollinator Monitoring Scheme (PoMS), the WCBS team encourage you to undertake a "Flower-Insect Timed Count" or FIT Count in your WCBS square or garden. The FIT Count is a simple 10-minute survey to collect data on pollinator numbers, recording all flower visitors to group level on a patch of target flowers. FIT Counts work equally well in rural or urban locations, and can be done in warm, dry weather any time from April to September.

While many schemes experienced a decrease in survey activity through 2020 due to the pandemic, PoMS saw a welcome increase in FIT Count activity with nearly 2,000 counts submitted by 483 recorders, more than double the total for 2019! This is helping build a picture of the abundance of different insect groups visiting flowers through the season across the UK. The graphics show insects counted on two of the 14 target flowers, with lavender seeing probably the highest proportion of butterflies and moths of all the target flowers (at 4% of visitors) and ivy providing a key late summer resource for wasps and flies in particular. All the FIT Count materials are available on





the PoMS website: look out for the brand new FIT Count app, due to launch in late April along with the new PoMS website.

PoMS is also running a more intensive systematic survey of bees, hoverflies and other insects across a network of 1 km squares in England, Wales and Scotland, with Northern Ireland joining the scheme this year. They are looking for volunteers to adopt remaining squares. You would receive individual training from a PoMS team mentor and all the equipment needed, in exchange for four survey visits a year. **Contact poms@ceh.ac.uk for more information.**

WHAT'S ON

International Symposium – Future of Butterflies in Europe (Online)

8th and 9th April 2021

The online programme will consist of two morning sessions; each session featuring five speakers, who will highlight current developments in the ecology and conservation of butterflies and moths in Europe. Free event, but please book here: www.vlinderstichting.nl/futureofbutterflies

UK Butterfly Recorder's Meeting

The UK Butterfly Recorder's Meeting took place online for the first time in March. The meeting featured a wealth of informative and fascinating talks including a first look at the official butterfly population trends from UKBMS 2020. The meeting was recorded and will be available to watch back on BC's YouTube channel.

Local Events

Below is a selection of BC events that WCBS recorders may find interesting. Many events have now moved online for 2021. Please keep an eye on the 'Event' pages of the BC website for news of events in your area.

The Upper Thames Branch are running a wealth of interesting and informative online events throughout this year. To book or find out more please see here:

Ringlet by Megan Lowe

https://www.upperthames-butterflies.org.uk/online_events

Surrey and South West London Branch are also running a programme of inspiring talks. To view upcoming events or watch previous recorded talks please visit: https://butterfly-conservation.org/in-your-area/surrey-and-sw-london-branch/zoom-talks

GETTING INVOLVED

Getting involved in the WCBS

Overall co-ordination of the WCBS is led by Butterfly Conservation's WCBS Officer, with squares allocated to recorders through a network of voluntary local Champions (see 'Meet the Team'). The WCBS Officer, Megan Lowe, can be contacted via survey@butterfly-conservation.org. If you would like to take part in the WCBS on your BBS square, please contact Sarah Harris at the BTO via bbs@bto.org.

WCBS Champions

WCBS Branch Champions have a pivotal role in promoting and co-ordinating the scheme in their local areas. Throughout the season they also provide support and encouragement to recorders as and when required. For the coming 2021 season we welcome Steve Mathers to the team of WCBS Champions; Steve has taken over from Suzanne Halfacre as County Butterfly Recorder and WCBS Champion in Nottinghamshire. We also welcome and thank temporary Champions Nick Bowles (Upper Thames), Alan Dawson (Norfolk), and Rachael Conway (Northern Ireland) who have kindly stepped in to help cover the role until new Champions are found. Over the last few months we have said farewells to Celia Macey (Norfolk), Mike Wilkins (Upper Thames), Suzanne Halfacre (Nottingham), and Peter Courtney (Northern Ireland). A huge thank you to them all for their work in promoting and growing the scheme. To find out who your WCBS Champion is please see page 9 of this newsletter.

Champion Vacancies

We have a number of opportunities for new Champions to get involved with the Scheme this year. Vacancies are currently available in Lincolnshire, Norfolk, Northern Ireland, and South Wales BC Branches. The role would suit an organised person who enjoys engaging with recorders and volunteers. There is no requirement to be a butterfly 'expert', as training and support will be provided by both the WCBS Officer and the local BC Branch. If you are interested in finding out more please contact WCBS Officer, Megan; survey@butterfly-conservaton.org.

BTO Regional Organisers

The WCBS on BBS squares is nationally coordinated by Sarah Harris at the BTO, however, we are hugely grateful to the efforts of the BTO's Regional Organisers for the BBS who help promote the WCBS to their BBS volunteers.

"It is great when you can match a walker to a square or a transect route and they find that they really enjoy doing it. Of course not everybody is going to take to butterfly monitoring – one has to accept that. But when it works you feel that you have done something positive for that individual – and they are generating butterfly records as well. I find that transect walking is a lesson in how to improve your noticing skills. And over time you find yourself noticing more and more. This is one of the reasons I think why butterfly monitoring schemes have been so successful."

Bill Downey, WCBS Champion for Surrey and South West London.

MEET THE TEAM

UK co-ordination

Megan Lowe, WCBS Co-ordinator
e survey@butterfly-conservation.org
T 07827 460767
www.butterfly-conservation.org

Sarah Harris
(BBS National Organiser at BTO)
e bbs@bto.org
T 01842 750050
www.bto.org

BC Champions

BEDFORDSHIRE & NORTHANTS
Clare Topping
e clare.topping@gmail.com

CAMBRIDGE & ESSEX: Cambridge
Vince Lea
e vincelea@btinternet.com

CAMBRIDGE & ESSEX: Essex
Rob Smith
e recorder@cambs-essex-butterflies.org.uk

CHESHIRE & PEAK
Alan Chadwick
e chadwick306@btinternet.com

CORNWALL
Kelly Uren
e ktherese@hotmail.co.uk

CUMBRIA
Martin Chadwick
e martin_chadwick@hotmail.com

DEVON
Jenny Evans
e jennifer.evans@lineone.net

DORSET
Adrian Neil
e raneil418@gmail.com

EAST MIDLANDS: Derbyshire
Ken Orpe
e ken@malaga.plus.com

EAST MIDLANDS: Leicestershire
Richard Jeffery
e winrich168@btinternet.com

EAST MIDLANDS: Nottinghamshire
Steve Mathers
e smbutterflies11@gmail.com

EAST SCOTLAND
Richard Buckland
e r.buckland@blueyonder.co.uk

GLASGOW & SOUTH WEST SCOTLAND
Louisa Maddison
e louisa.maddison@southlanarkshire.gov.uk

GLOUCESTERSHIRE
Tricia Atkinson
e vice-chair@gloucestershire-butterflies.org.uk

HAMPSHIRE & ISLE OF WIGHT
Jacky Adams
e jackyna7579@gmail.com

HERTFORDSHIRE & MIDDLESEX
Andrew Wood
e zoothorn@ntlworld.com

HIGHLANDS
Kirstie Ross
e funkyhaywood@yahoo.co.uk

KENT
Paolo Farina
e paolofarina@hotmail.co.uk

LANCASHIRE
Stephen Ryder
e steve.ryder@butterfly-conservation.goassemble.com

LINCOLNSHIRE
c/o BC's WCBS Co-ordinator Email
e survey@butterfly-conservation.org

NORFOLK
c/o Alan Dawson
e aandcdawson@talktalk.net

NORTH EAST ENGLAND
Val Standen
e valerie.standen@hotmail.co.uk

NORTHERN IRELAND
c/o Rachael Conway
e rconway@butterfly-conservation.org

NORTH WALES
Amy Green
e wildswimmingwolf@gmail.com

SOMERSET & BRISTOL
Penny Wills
e WCBS@somersetbutterflies.org.uk

SOUTH WALES
c/o BC's WCBS Co-ordinator Email
e survey@butterfly-conservation.org

SUFFOLK
Twm Wade
e twm.wade@yahoo.com

SURREY & SOUTH LONDON
Bill Downey
e billdowney@sky.com

SUSSEX
Colin Gibbs
e sxbcwcbs@outlook.com

UPPER THAMES (BUCKS, BERKS & OXON)
c/o Nick Bowles
e nick.bowles@ntlworld.com

WARWICKSHIRE
Keith Warmington
e keith@warmies.co.uk

WEST MIDLANDS: Herefordshire and Worcestershire
Philip Nunn
e philip-nunn@hotmail.co.uk

WEST MIDLANDS: Staffordshire & Shropshire
Scott Martin
e scottm2512@gmail.com

WILTSHIRE
Janet Crittenden
e janetmcrittenden@gmail.com

YORKSHIRE
Rachel Pateman
e rachelpateman@gmail.com

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Butterfly Conservation
Saving butterflies, moths and our environment
UK Centre for Ecology & Hydrology
BTO Looking out for birds
JNCC
United Kingdom Butterfly Monitoring Scheme