NFBR

National Forum For Biological Recording

Newsletter 61 – April 2021

Contents

Welcome to Issue 61 of the National Forum for Biological Recording Newsletter.

As lockdown eases and sunny days lie ahead, spring is a particularly tantalising time for recorders this year, and you will hopefully find plenty to whet your appetite in this bumper edition.

There are several recording schemes and studies to get involved with, and some great looking new resources to aid identification and showcase the data gathered by recorders.

I hope you enjoy this edition of the newsletter; many thanks to all article contributors. I look forward to seeing many of you (virtually) at our conference next week!

Elaine Wright (Editor) editor@nfbr.org.uk

As always, if you would like to make a contribution to a future newsletter, please get in touch at any time. The next edition will be out in autumn 2021.

Cover photo: Tray of Blue butterflies from OUNHM © Zoë Simmons
Learn about OUHNM's HOPE project on pg. 16

NFBR News

Elaine Wright

National Forum for Biological Recording

2021 Conference

At time of writing there is still time to book on our 2021 conference, which is taking place virtually on 6th & 7th May. The theme is "Outside the Honeypot: Wildlife Recording in the Urban World" and will cover the trials and rewards of recording wildlife in urban settings.

The conference was organised jointly with the Tanyptera Project and originally planned to take place at the World Museum in Liverpool, but will now take place on Zoom. You can book a space via the Field Studies Council, who are hosting the event: www.field-studies-council.org/shop/courses/national-forum-for-biological-recording-2021-conference/

There is a small £5 fee to cover the FSC's costs.

Talks include:

Keynotes from Mathew Frith (London Wildlife Trust) & Liz Ballard (Sheffield & Rotherham Wildlife Trust)

Slimy, sticky and unloved: slugs in UK gardens *Imogen Cavadino*

Challenges of recording nature in cities *Stuart Fraser*

Urban bird recording *Dawn Balmer*

Wildlife on colliery sites *Liam Olds*

Plus two workshops:

Urban species mixes and botanical recording *Katharina Dehnen-Schmutz*

Urban grassland condition assessments *Jonathan Dent*

Find the full programme here.

If you can't make the event, keep an eye on our YouTube channel, where we will upload several of the conference talks.

Current NFBR Governance

NFBR has a board of trustees who form the Executive Committee, plus an Advisory Council. You can learn more about the individual Trustees and Council Members on the NFBR website.

Current members and positions held are as follows:

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*NFBR 2017 Conference field trip failing to leave the car park at Sherwood Forest © **Teresa Frost***

Car parks: an unlikely wildlife hotspot

Richard Comont

On occasion, I will suggest to my wife that we might go for an excursion to some local wildlife site. "It's got species x!" I might say, or, 'Species Y should be out now!". On such occasions I have grown to expect a cold-eyed stare of wifely interrogation: "That sounds nice" she might say "but you are planning to go further than just the car park, aren't you?" There is always a distinct edge to the last two words of that sentence.

For while my wife is an excellent naturalist, we do differ somewhat in our preferred approaches to exploring new areas. Hers is to go on great long walks for miles and miles, walking all day if possible. By contrast, my own preferred option is to spend the maximum amount of time really thoroughly sorting through a habitat, turning over logs and peering beneath bark. This can definitely reduce my average MPH: once, bioblitzing Looe Island with a friend, we realised that while her partner and their pre-teen daughter had botanised their way around the entire island (twice), we'd managed to work our way less than three feet along a wood pile.

Car parks, therefore, are ideal for my kind of natural history. Miniature brownfield sites, they're usually warmer than the adjacent habitat, contain a lot of habitat types in close proximity, and are subject to the kind of middling levels of disturbances that they rave about in ecology textbooks. Ideal for invertebrates! Those who've spent time in the field with me would probably add that it's close

enough to the car to minimise the chances of my getting lost…

Habitat edges always seem to produce the best finds: well, round the edges of a car park you'll typically have bare ground, creeping vegetation and moss matts, banks and ditches (usually with seasonally-wet with exposed mud), rank ruderal vegetation, hedges, and trees, all picked in tightly together. Not massive amounts of each – but plenty to keep small populations of lots of species ticking over. In wooded sites the car park often provides a meandering gradient from bare earth to full-canopy woodland which is noticeably different to the vertical edges of fence-lines or roads.

At more open sites, the average countryside car park will have an attempt at a hedge, sometimes with a bank and ditch. This often turns the car park itself into a sheltered sun-trap – a brilliant mini-brownfield site. Just like many brownfield sites, the plants present are usually an eclectic mix of garden escapes and native opportunists. Not great for botany, but great for flower-feeders, phytophagous insects, and all the others that feed on them in turn.

At the RSPB's Dungeness reserve (to name just one excellent car-park wildlife spot), the rare solitary bee *Andrena vaga* nests in the soil of the car park and forages on the willows growing around the edges. The bunds surrounding the car park support Yellow Horned-poppies, Great Green Bush-crickets, Green Tiger beetles and *Psammodius asper*, while the Ant Woodlouse *Platyarthrus hoffmanseggii* and the ant *Ponera coarctica* can be found under stones.

Ah yes, stones. Car parks always seem to have a good selection of stones, lumps of wood, and other miscellaneous debris which shelter a good assortment of invertebrates – slugs, snails, ground beetles, springtails, pseudoscorpions and the like. Turning them over during the day will find a good selection of them: visiting at night will see many leave their shelters in favour of scuttling at high speed across the warm ground. I once paid a nocturnal visit to Cornwall Wildlife Trust's Windmill Farm reserve for a BioBlitz and had to pick my way slowly and carefully through a swarm of ground beetles (*Harpalus rufipes*) out on the hunt. There were also pill beetles under the encroaching moss sheets, crane flies and moths being eaten by bats in the car headlights – we found probably as many species within ten yards of the car park as we did in the rest of the site!

Obviously, care is needed with nocturnal visits to avoid bumping into a whole different kind of wild life. But the less salubrious aspects of car parks can also be good for wildlife. I've seen Purple Emperor, Adonis Blue, and all sorts of other butterfly species visiting car parks: sometimes to bask (the urban heat island effect in miniature) but more usually to get a quick fix of moisture and nutrients from what dogs and horses leave behind. Easy to access, loads of interesting species: car parks can be fantastic!

Don't get me wrong. Remote areas and megafauna (with or without a backbone) can make the spirit soar; the wide open landscapes of Salisbury Plain or the Brecks, the magnificent dunescapes of North Devon or the Outer Hebrides, the rocky hills and heather of Dartmoor or the Cairngorms, alongside so many others, are cathedrals of natural history. But before you enter the cathedral, just take a moment to check out the car park. You won't be disappointed.

Predicting the niche suitability of *Microstegium vimineum* in Great Britain, Oxfordshire and Berkshire

Karl Reimand, University of Oxford

Introduction

Microstegium vimineum (commonly known as Japanese stiltgrass), native to Southeast Asia, is an aggressive invasive alien species in eastern US[1]. Owing to its fast growth and ability to grow relatively efficiently under both sun and shade conditions, the species has spread rapidly in a wide variety of habitats ranging from forests (Fig. 1A) to floodplains[2]. The impacts of *M. vimineum* on ecosystems are varied. On the one hand, invasion by *M. vimineum* can reduce native herbaceous plant biomass and decrease the overall richness and diversity of native plant species[3,4]. On the other hand, it can provide suitable habitat for certain native frog species in northeastern US[5]. Nevertheless, *M. vimineum* is considered a high-risk invasive in the EU[6] and has been listed among the 30 highest-risk invasive species that could spread to Great Britain[7]. This is mainly due to its effects on nutrient cycling and food webs, but also potential interactions with other invasives that could be harmful to local biodiversity[6,7].

A common way to estimate the future spread of an invasive species is to model its niche suitability based on environmental predictors. In general, niche prediction uses field observations of a target species and various environmental variables to model the niche of the species, which is then used to predict the presence of suitable habitat for that species under different environmental conditions or in a different geographic region. Here I used observations of *M. vimineum* in eastern US and a variety of publicly available environmental data to predict habitat susceptibility to invasion in Great Britain. I then looked more specifically at Oxfordshire and Berkshire, investigating the overlap between the suitable habitat for *M. vimineum* and local Sites of Special Scientific Interest (SSSIs), which contain some of the most precious wildlife in the area.

Methods

My analysis largely followed the methods of a recent paper by Lázaro-Lobo *et al.* (2020) that predicted the invasive ranges of a variety of plants in the US, including that of *M. vimineum*[8]. I downloaded *M. vimineum* occurrence data from the Global Biodiversity Information Facility (GBIF)[9]. I then limited these data to 11 states across eastern US: New York, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, District of Columbia, Virginia, North Carolina, South Carolina, and Georgia (Fig. 1B). By doing so, I aimed to cover a relatively wide range of environmental conditions and use a large number of *M. vimineum* records for building the model, while somewhat limiting the area due to a lack of computational power. I organised the data with R[10], and only kept observations with a geographical error of less than 50 metres (1,866 observations in total). In order to control for a potential lack of independence between the occurrences and make the dataset more random for statistical purposes, I created a random subsample of occurrence points that were all at least 10 km apart from each other (ending up with a final sample size of 400 observations). Country outlines for the US and Great Britain were obtained from the United States Census Bureau and the Ordnance Survey, respectively. Geographic outlines for SSSIs were

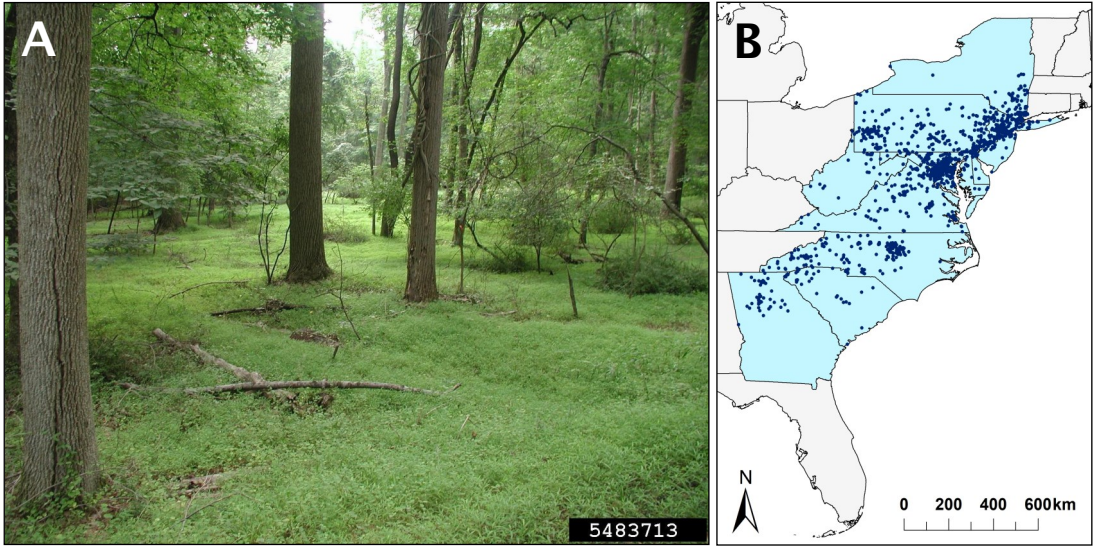

Figure 1. (A) *M. vimineum* infestation in a forest understory. Photo: L.J. Mehrhoff, University of Connecticut, Bugwood.org, CC-BY-3.0. (B) *M. vimineum* occurrence points in the eleven 'states of interest' in eastern United States (see description in the methods) obtained from GBIF. Only the points with a geographical error of less than 50 metres are displayed in the figure (1,866 occurrences).

downloaded from Natural England's website.

The environmental variables used in my analysis were based on those used to create the models in Lázaro-Lobo *et al.* Due to a time constraint, I decided to only use the most important variables (i.e. those with the highest explanatory power in the original models), including (1) minimum temperature of the coldest month, (2) maximum temperature of the warmest month, (3) distance to developed areas, (4) elevation, and (5) canopy cover percentage[8]. I downloaded the first two variables from the Worldclim database[11] at a spatial resolution of ~1 km^2. Distance to developed areas in the US and Great Britain was calculated using ArcGIS Desktop 10.8 and land cover data from the National Land Cover Database (NLCD) 2016[12] and the NERC Environmental Information Data Centre[13]. Finally, I obtained Global SRTM elevation data from the CGIAR-CSI GeoPortal[14], and global tree canopy cover from the GLAD laboratory of the University of Maryland[15]. I also changed the resolution of all environmental variables to 50m in order to match them in size for the model. Because of data limitations, I conducted my predictive analysis only in Great Britain, rather than the entire UK (i.e. only in England, Scotland and Wales and the associated islands, following the political rather than the geographical definition), although I also excluded Shetland Islands due to a lack of appropriate elevation data.

For my species distribution model (a maximum entropy model), I used Maxent software by Philips *et al.*[16]. Since species occurrence data in the US were sampled across a relatively wide geographic range, I limited model input to only those counties in the 11 selected states where *M. vimineum* presence had been recorded. The results of the model were then projected on Great Britain to predict the potential niche suitability of *M. vimineum* across the region. I also used the same model outputs to focus more specifically on Oxfordshire and Berkshire.

Results

The model had a good but not excellent fit (AUC = 0.728, where AUC = 0.5 signifies the fit of a random model) to the data. The order of variable importance—the relative contribution of variables to the model—from highest to lowest was as follows: canopy cover percentage (52.8%), elevation (17%), distance from developed areas (16.7%), the minimum temperature of the coldest month (9.6%), and the maximum temperature of the warmest month (3.9%). Jackknife tests showed that canopy cover was the single most important variable in the model, as it made the largest contribution and had the highest amount of unique information (i.e. explained distribution patterns not explained by other variables). Jackknife tests also suggested that model fit would have been improved by omitting the maximum temperature of the warmest month variable, as it did not do a good job at describing *M. vimineum* occurrence patterns. In general, the predicted probability of *M. vimineum* presence increased with higher tree canopy percentage, while both increased distance from developed areas and higher elevation reduced that probability.

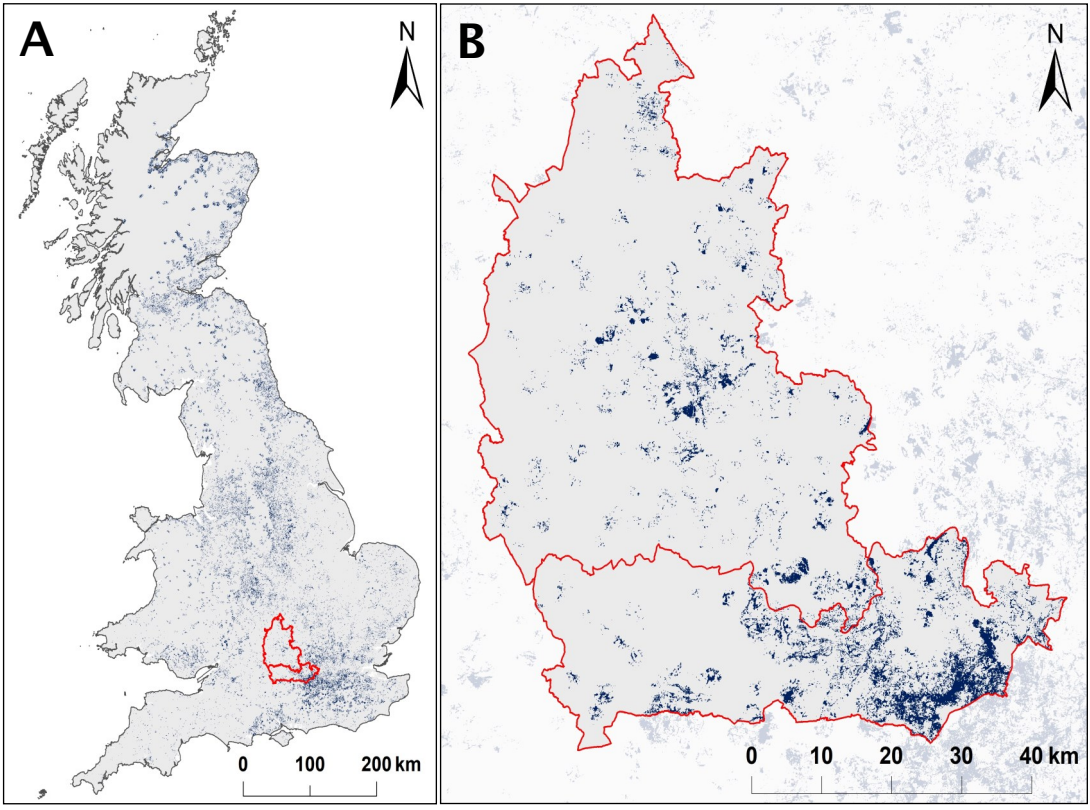

Figure 2. (A) The area of Great Britain susceptible to invasion by *M. vimineum* is depicted in dark blue. The counties outlined in red represent Oxfordshire (northern) and Berkshire (southern). (B) Parts of Oxfordshire and Berkshire highly susceptible to invasion by *M. vimineum* are depicted in dark blue.

Approximately 4.74% of the area of Great Britain was predicted to be susceptible to invasion by *M. vimineum* (Fig. 2A), while this percentage was about 6.11% for Oxfordshire and Berkshire combined (Fig. 2B). The susceptible areas seemed to be relatively evenly distributed across much of Great Britain, with Southeast England and the Midlands at an above-average risk, and Wales, Southwest England, and Scottish Highlands at a below-average risk (Fig. 2A). In case of Oxfordshire and Berkshire, 96 of the total of 186 SSSIs (51.6%) in those counties were at risk of invasion. Within the 186 SSSIs, an average of approximately 38.59% of the area was predicted to be susceptible to *M. vimineum* invasion. The SSSIs with the highest proportion of area at risk were Bisham Woods (93.61%), Chinnor Hill (92.94%), Englemere Pond (92.03%), Priest's Hill (90.44%), and Longmoor Bog (89.37%).

Discussion

Overall, the results of the analysis show that while the total area of Great Britain that may be susceptible to *M. vimineum* invasion is relatively low, more than half of SSSIs in Oxfordshire and Berkshire could be affected. These areas also seem to be particularly susceptible to invasion compared with Great Britain on average, and in certain SSSIs, high-risk areas constitute more than 90% of their area. Based on the variables used in modelling, canopy cover seems to be by far the best predictor of niche suitability for *M. vimineum*, while temperature-based predictors seem to be relatively unimportant. The finding that canopy cover percentage is positively correlated with the presence of *M. vimineum* is congruous with the suggestions that its use of C_4 photosynthesis may give it a competitive advantage in the shaded understory environment[17], while the negative correlations of presence with both elevation and distance from developed areas are compatible with the suggestion that the spread of *M. vimineum* is largely facilitated by humans[18].

However, I admit that I am also quite critical of these results. The main reason is my own lack of experience in niche modelling, although I have done my best to conduct an objective analysis. Another reason is that species distribution models tend to not be easily spatially transferrable. The modelling method used in this analysis (Maxent), while supposedly performing better than some of the other approaches, has also been subject to these criticisms[19]. There may also be bias in the species occurrence data used to create the model, as well as correlations between the used environmental variables, both of which would influence the model outcome. However, while I do not think that the results of my short modelling exercise were conclusive, I would consider them to be another warning that the Japanese stiltgrass may find it easy to make itself at home in some of the most valuable natural sites in Oxfordshire and Berkshire.

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National Plant Monitoring Scheme: volunteer-collected data feeds into new national biodiversity indicator

Louise Marsh, BSBI

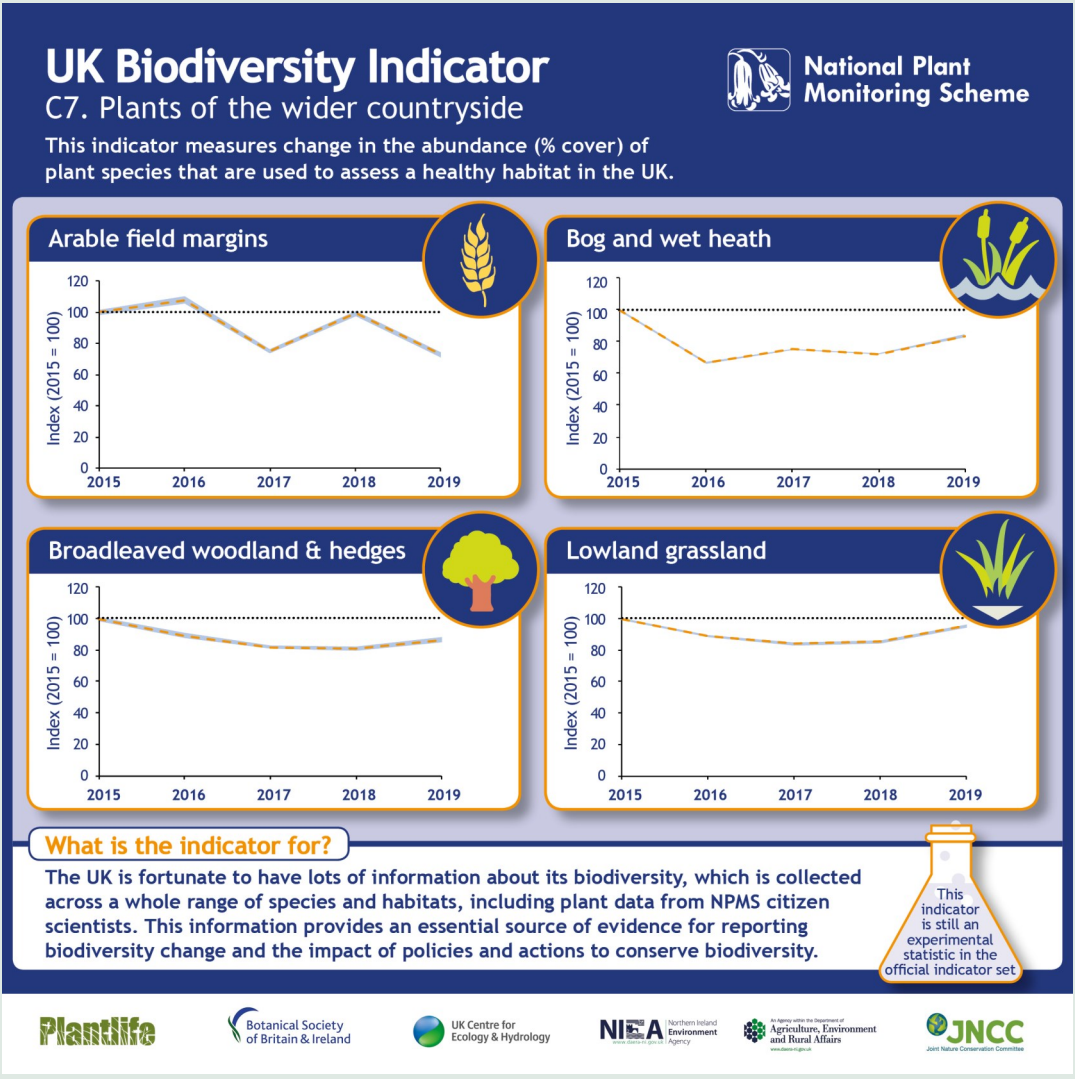
An article in the April 2020 issue of the NFBR newsletter, about BSBI and recording our wild flowers, explained why BSBI joined forces in 2016 with Plantlife, the UK Centre for Ecology & Hydrology, the Joint Nature Conservancy Council (JNCC) and DAERA-NI to launch the National Plant Monitoring Scheme (NPMS), a habitat-based monitoring scheme for the UK. You can find out more about the Scheme here: https://www.npms.org.uk/

In autumn 2020, at the end of the sixth field season for NPMS recorders, data collected by volunteers were, for the first time ever, included as part of an experimental "Official Statistic" within the UK Biodiversity Indicator for Plants of the Wider Countryside. These annual indicators, published by Defra and JNCC, provide researchers, academics and statutory bodies with a robust and reliable source of evidence for reporting biodiversity change, shaping policies around habitat management and monitoring the successes and failure of such policies. The habitats covered by the new indicator include arable field margins; broad-leaved woodland and hedges; bog and wet heath; and lowland grassland.

The inclusion of volunteer-collected data in the Indicator is a tribute to the contributions of c1,500 recorders who have taken on a square and set up one or more plots which are surveyed twice each year at one of three skill levels: beginner, intermediate and expert. The high-quality data these volunteers collect are helping us understand more about how our habitats, and the wild plants they support, are being impacted by drivers such as climate change, eutrophication and the incursion of invasive non-native species.

Squares are still available in many parts of the UK for any biological recorder keen to monitor and learn more about our wild flowers and contribute to the NPMS: https://www.npms.org.uk/square-near-me-public

More details about the indicator are available in the infographic below and here: https://jncc.gov.uk/our-work/ukbi-c7-plants-of-the-wider-countryside/




*S-morph, left and L-morph, right © **Plantlife***

Cowslip Survey

Sarah Shuttleworth

With a myriad of local names such as ‘Cowslops’, ‘Fairy cups’ and ‘Bunch of keys’, cowslips are steeped in folklore and one of our most familiar spring wild flowers, popping up on banks, verges and meadows in April and May. The drooping, butter-yellow flowers with orange throats are an iconic sight, but have you ever looked closely at one?

This April, Plantife is asking us all to take a close look at cowslips and record what type we see; Are they an "S" or "L" type of cowslip? The difference is in the flowers:

The "S-morph" has the male parts of the flower (the stamen, above left) which are easy to spot

The "L-morph" has only the top of the female part (the stigma, above right) visible

In healthy cowslip populations, there should be equal numbers of both types of flower to enable successful breeding. However, this 50:50 ratio becomes imbalanced when the cowslip population declines due to loss of habitat or if there is a change in agricultural practices. Knowing the ratios in the area helps us understand more about the quality of our grasslands.

Researchers at the University of Tartu, Estonia have reported greater instances of the S morph than the L morph in cowslip populations. This could indicate pressures of land use change and declining habitat health. As genetic diversity within populations decreases this could make cowslips more vulnerable to climate change.

Sadly, wildflower meadows and species-rich grasslands now cover less than 1% of the UK, and the remaining meadows are fragmented, neglected and forgotten; once common meadows species have declined, yet a healthy wildflower meadow can play home to an unparalleled and concentrated diversity of over 700 wild flowers and can support over 1000 species of insects. Meadows provide one of our most iconic wildlife spectacles: a wealth of beauty, scents and sounds that everyone should be able to enjoy.

To get started in the cowslip survey, and help Plantlife and its European partners understand more about the health of our grasslands, visit: https://bit.ly/31qXw3J

Gaultheria shallon © **Plant Alert**

Plant Alert – Preventing future invasions of ornamental plants

April Webb

Introduced into Britain and Ireland by well-meaning historic plant-hunters, plants such as Himalayan Balsam now swamp riverside and woodland vegetation. Simultaneously, *Rhododendron ponticum* causes headaches in the countryside, and Japanese Knotweed remains the scourge of homeowners. If only scientists could go back in time and warn those gardeners that some of the species they were lovingly cultivating so carefully would cause us all centuries of economic and environmental problems.

Well, here's the next best thing: scientists are engaging gardeners across Britain and Ireland to help them identify tomorrow's invasive species today. Plant Alert offers gardeners a quick and easy way of reporting any ornamental plants showing signs of invasiveness. Gardeners are best placed to spot these potential troublemakers - the plants that have to be controlled to prevent them from overgrowing other plants or spreading into parts of the garden where they are not wanted. Traits that should set alarm bells ringing include vigorous growth, prolific self-seeding, longer flowering periods, and any plant that the gardener has to 'keep on top' to prevent it from spreading.

There are often long delays, sometimes more than 100 years, from the introduction of ornamental plants in gardens to recognising a problematic plant in the wild, making effective prevention strategies very difficult. Large numbers of plants introduced into gardens over the last century have created an "invasion debt" of alien species that are already introduced and present in gardens. Furthermore, the invasion risk of these species could potentially be accelerated by climate change, resulting in plants previously not considered fully hardy to establish and spread. The challenge is to identify the potential future problematic plants out of this ever-increasing pool of about 80,000 ornamental plants available to gardeners.

For more information, to contribute, and view results, visit www.plantalert.org.

Plant Alert recently featured in the FSC Biolinks Natural History Live series, which you can catch up on here: https://youtu.be/jn4pZyCTMls

Plant Alert also has a Twitter feed where you can keep track of the activities of the project, latest news, and potential species to look out for and report on @Plant_Alert

Recording Scheme Spotlight

Each issue the NFBR newsletter celebrates one of the many and varied National Recording Schemes in the UK. These schemes help to ensure accurate species identification, help with dataflow and are an essential part of the British wildlife recording community.

This time we are featuring the **Wetland Bird Survey**, written by Dr Teresa Frost (WeBS Manager).

Tell us a bit about the scheme

The BTO/RSPB/JNCC Wetland Bird Survey (WeBS) is the flagship survey for non-breeding waterbirds in the UK. It began as a national scheme in 1947 for wildfowl in the winter, and grew to include other waterbird species and wetland habitats and to become a year-round survey. The main survey is called WeBS Core Counts, and involves a monthly visit, preferably on the pre-set Sunday, to a pre-determined count area to identify and count all waterbirds present. There are also opportunities to do additional casual and roost counts, and to count estuaries at low tide to record feeding areas.

"Waterbirds" includes wildfowl (ducks, geese and swans), waders, rails, divers, grebes, cormorants and herons. Gulls and terns are optionally included. This includes non-natives, vagrant and escaped species, so about 300 taxa have been recorded over the years. In a typical year over 220 waterbird species, races or populations are counted. National trends are produced for the most numerous 110 of these.

How is the scheme run

Over 3,000 people take part each year. Most are volunteers directly with WeBS, but at some places the counts are done by habitat managers such as nature reserve wardens and their volunteer teams. WeBS is a partnership between BTO, RSPB and JNCC in association with WWT, and is run by BTO. The national BTO team is greatly assisted by 140 volunteer WeBS Local Organisers, who organise the volunteer counting teams in a county or at a larger site such as an estuary. They advertise and find new counters, publicise the survey locally, work with bird recorders and county bird clubs, and verify records for their region.

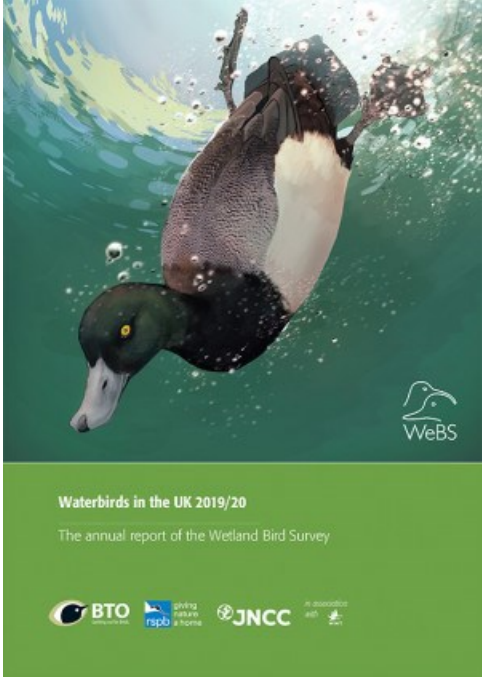
As a long-term monitoring scheme, it is important that we have continuity of recording at each site, so we don't accept ad hoc records. A new counter needs to be confident of being able to identify and count all the regular waterbirds at their allocated site. At some sites this might be a small number of fairly easy to identify species, but at a coastal site a great deal of skill and experience can be required! We have a map where you can check for sites needing counters locally (www.bto.org/webs-vacant-sites), and we can set up new sites where wetlands are not already in the scheme.

Do you run events such as field days or training courses?

BTO runs courses on waterbird identification and an introduction to WeBS. These usually take place in the autumn and winter and are advertised with other bird training courses at www.bto.org/develop-your-skills/training-courses. We also have some YouTube ID videos for challenging species and Local Organisers sometimes organise training and mentoring locally.

Do you publish a newsletter and or journal

We have two publications a year. Our annual report, Waterbirds in the UK (right) contains the official results of the scheme and is published in the spring. It has two components, a written report (www.bto.org/wituk) containing headline results and in-depth articles on species and research using WeBS data, and the WeBS Report Online (www.bto.org/webs-reporting) which is an interactive system where you can view and download results for all the hundreds of species and thousands of sites in the scheme. We also have an annual newsletter, WeBS News, published in the autumn, which features stories from the volunteers who take part and where WeBS data has been used. Hard copies of the annual report and newsletter are sent to everyone who has taken part, and are also available for anyone to read online.



Can you tell us about a particular species that readers can look out for?

One of the most interesting things about the past few years has been really fast increases in some of the herons and allies. Little Egret has been increasing since the 1990s in England and Wales, and in the past 10-15 years has been increasing rapidly in Scotland and Northern Ireland as well. Now in England it is Cattle Egret and Great White Egret that are occurring at more and more sites each year. With Spoonbill also increasing, it is more challenging to identify long-legged white birds than it used to be in UK wetlands!

Any highlights or achievements you would like to share from the past year?

We recently expanded our data collection to collect information on age and sex in flocks of some waterbird species which will help us learn more about breeding success and different migration strategies, so it will be very interesting to look at that data in a few years' time. We've also made a lot of improvements to our Online Report including adding data downloads, so we hope more people than ever will be using WeBS data.

The last twelve months have been really challenging, with lockdowns affecting how much volunteers can do across the four nations at different times. Luckily, as we've been going for over 70 years, we'll be able to cope with a few gaps in the dataset. On the upside it has encouraged us to develop our online training and it's also been great to hear from people who are really excited when they've been able to get back to their own WeBS site and get counting again!

How should readers get in touch if they wish to know more about your scheme?

Our website (www.bto.org/webs) is the starting point to finding out more, or please follow us on Twitter and Facebook.

*Great Green Bush-crickets at the Museum © **Zoe Simmons***

Oxford University Museum of Natural History

HOPE for the Future at OUMNH

Zoë Simmons, Head of Life Collections

In 2019, Oxford University Museum of Natural History (OUMNH) began the delivery phase of a £1.3million NLHF funded project 'HOPE for the Future'. The word 'Hope' in the title is, in part, a nod to the entomology department's founder, the Reverend William Frederick Hope who, through bequest of both collection and funds, set the then Oxford University Museum on the path to becoming, in the present day, the second largest insect collection in the United Kingdom with an estimated 5.5 million specimens. 'Hope' is also a cunning acronym (or so we like to think) for 'Heritage, Outreach and Preservation of Entomology', which encompasses the three strands of work from which this project is woven.

The project is centred on the museum's British insect collections. The heritage strand refers to the room that the collections are stored in, which is the original location in the museum for the Hope Entomological Collections. It is richly decorated in hand-painted pre-Raphaelite design and will be restored to its original 1860 appearance.

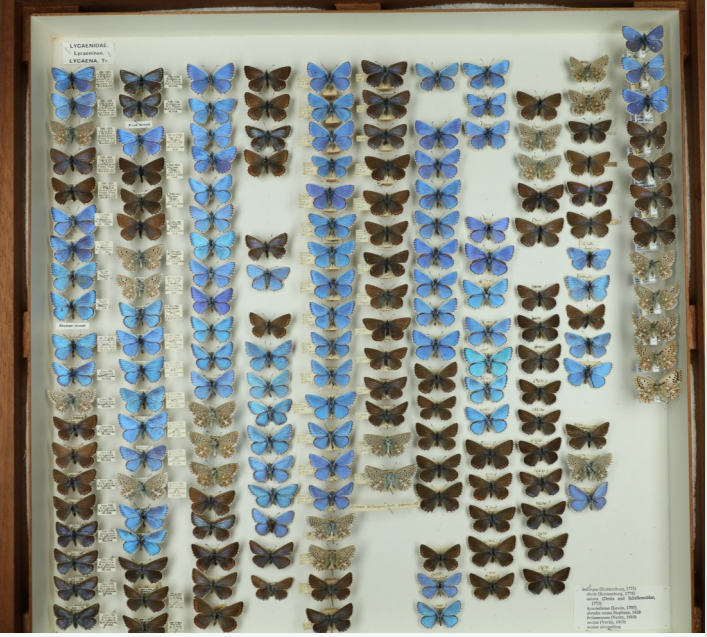
The outreach portion of the project is an ambitious engagement programme with elements linking to schools, young entomologists, families, and adults, with a specific strand working with older people. There are numerous points of interaction with

diverse audiences with the aim to engage, inform and deepen knowledge of the British insect fauna. Perhaps of particular interest here is the work the team is doing to support and enhance science learning in and out of school through outreach events, clubs and a museum blog, 'Crunchy on the Outside'. Recording species has been particularly emphasised and proven an excellent tool for engaging with the next generation of scientists as it creates opportunities for repeat interactions whilst including the capacity for independent study.

The final strand is concerning the British insect collection itself. This collection contains over one million specimens and is 'Designated' by Arts Council England as being of national and international importance. All of the specimens are being conserved and moved into new sector standard storage so as to ensure their longevity for future generations, but their accessibility is key and of immediate importance. A new off-site store is in preparation that will increase physical access for visitors. It comes complete with lifts, equipped work-areas, digital imaging equipment, nearby conservation lab and teaching spaces. Storage furniture is designed to be interchangeable, expandable and has the ability to be easily rearranged so collections can reflect current taxonomy. Digital images are being captured of the collection's drawers and records created to document the collection in the museum's database. Although these initial records are relatively low in detail they herald a step change in work for the museum and provide a project legacy that will continue to be built on in the coming years.

Westwood room with drawers of newly arranged collections materials, ready to be moved to an off-site store
© Zoe Simmons

In the before-project times, there was no way of efficiently recording newly generated associated collections data such as new identifications or extracted label data. In the future as work is done on the collection, information will be able to be captured at different granularities, including at an individual specimen level if needed. This will allow records to be pushed out through a variety of digital platforms, for recorders to access specific collection materials as well as larger data sets. There is great potential in this regard, that will only increase the value of the collections to all who use them. There are other minor strands of work being undertaken in collections that compliment this; the weft to the warp. The library, for example, is looking to accumulate multiple copies of modern keys and identification guides so as to be able to facilitate practical collections work by visitors and volunteers, student teaching and outreach



*Drawer of blue butterflies © **Zoe Simmons***

sessions with the general public. In the entomology collections, work is being undertaken to improve information on donors and collectors so as to enrich species records and allow for linked collections data in those instances where materials are split across multiple institutions.

Through its vision and strategic plan the museum has stated that it has a commitment to fostering interest in the natural world, with a specific objective of supporting the wider community of special interest groups, wildlife recorders and naturalists through use of its space, its collections, its staff and internal resources. Pre-project conditions meant that staff and visitors alike were quite limited in what they could do, but as the collection and space within the museum opens up physically so both the range of uses and the capacity will expand. When coupled with the installation of a new collections management system in the museum in 2018, this heralds exciting times ahead as the museum looks to consolidate and expand on its offer for external groups. In particular it remains committed to the principle that wherever possible these offers should remain free to external users.

The collection spans almost the entire history of British entomology (around 200 years), representing extensive information on the biodiversity of Britain, documenting how it has changed during and after the Industrial Revolution. It offers a window into the natural world with specimens of species now considered extinct in the UK, including the large copper butterfly, blue stag beetle and many examples of the first British capture of insect species, some unique. It is a truly representative collection, not just of British insects but also of museum collections as a whole and of what we aspire for collections to be. They represent data banks of both longitudinally and geographically distributed data that can be mined for information. They are a history of science, its study and application. They are records of social history, people and place.

From initial conception to delivery this project has been one of ideals. It is of central importance to the museum that the collections be useful and be used. Whilst we have no desire to dictate the ways in which people use the collections (within reason, we are after all, a museum), we are passionate believers in enabling those diverse uses in any way we can. It is also true however, that even once this project is completed there will still be much work to do to ensure the continual improvement of the collection in terms of quality, accessibility and ultimately, relevance. This project is the ultimate opportunity in this regard, something to push off from and it represents, not just in name but in belief, that there is hope for the future.

White Moulds, *Ramularia* and *Phacellium* Anamorphs, in Wales and Britain: A Guide and Welsh Census Catalogue

Llwydni Gwyn, Anamorffau *Ramularia* a *Phacellium*, yng Nghymru a Phrydain: Cyfeirydd a Chatalog Cyfrifiad Cymreig

Arthur O. Chater, Ray G. Woods, R. Nigel Stringer, Debbie A. Evans & Paul A. Smith

White Moulds, *Ramularia* and *Phacellium* Anamorphs in Wales and Britain: A Guide and Welsh Census Catalogue

The "White Moulds, *Ramularia* and *Phacellium* Anamorphs in Wales and Britain" is the latest in an award-winning series of books on phytoparasitic fungi written by the Welsh Microfungi Group. This volume covers the White Moulds which are a comparatively neglected group compared to the Rusts, Smuts, Downy and Powdery Mildews. However, they are very common and can be conspicuous, infecting a wide range of plants and a few species are economically important as agricultural and horticultural pathogens. There are around 350 species worldwide, including about 108 recorded for Britain and Ireland, of which 81 have so far been found in Wales. Most are surprisingly easy to identify.

The book aims to raise the profile of the White Moulds and provides an identification guide to the species found in Wales and in Britain. It includes an Introduction to the group, with sections on Finding; Collecting and Preservation; Identification; Conservation and Habitat Preferences. These are followed by detailed Species Accounts which form the main part of the book. There is a Census Catalogue of species recorded in Wales and useful Tables of all the species recorded in Britain and Ireland sorted by fungus and by host.

The book is richly illustrated including full colour macroscopic images of infected plants and microscopic images of the fungi. Using the book and knowing the host species it should be possible to identify most of the species collected and we hope it will encourage and stimulate more recording of this group.

The book is in A4 format, spirally bound with a plastic-coated cover and contains 128 pages and over 300 images. You can examine an online version through the link below.

As a result of financial support from the British Society for Plant Pathology and the British Mycological Society, copies only cost £6.50 plus £3.20 p&p directly from Ray Woods, Ty Mawr Mill, Builth Wells, Powys. LD2 3SH. Email: raygwoods@aol.com.

Hard copies will also be available from on-line book suppliers (ISBN 978-0-956 5750-5-0) and digital copies can be download free from http://www.aber.ac.uk/waxcap/downloads/Chater21-RamulariaWalesCensus.pdf.

Copies of all the previous volumes in the series (Rust Fungus Red Data List of Wales; Smut and Allied Fungi of Wales; Powdery Mildews of Wales; Downy Mildews and White Blister-rusts of Wales) are also available to download from www.aber.ac.uk/waxcap/links/index.shtml. Hard copies of some previous volumes are also available from Ray (contact details above) and from on-line book suppliers.

NBN update

Mandy Henshall

Lisa Chilton joins the NBN Trust as CEO

We are delighted that Lisa Chilton joined the NBN Trust on 19 April to take up the role of CEO. Lisa has worked in biodiversity conservation for more than 20 years, including roles with The Wildlife Trusts and Joint Nature Conservation Committee (JNCC). An ecologist by training, she has specialised in marine biodiversity with roles ranging from citizen science, public engagement and communications to statutory advice, policy and legislation. More information on the NBN website.

iNaturalistUK launched

The NBN Trust is excited to announce that iNaturalistUK is the newest member of the international iNaturalist Network. iNaturalist is one of the world's most popular nature apps for identifying and recording wildlife.

A collaboration led by the NBN Trust with the Marine Biological Association (MBA) and the Biological Records Centre (BRC), iNaturalistUK joins the wealth of recording tools available to UK naturalists. Together, we will be developing ways of promoting and using iNaturalist in the UK to complement the other established recording tools already available, including iRecord and iSpot.

Users in the United Kingdom are encouraged to affiliate their account to iNaturalistUK to allow partner organisations enhanced access to UK sightings. This won't affect existing arrangements with how sightings are currently shared to the Global Biodiversity Information Facility (GBIF) or are available to the international community, but it will allow the BRC and local environmental records centres access to more detailed records.

Whilst there are currently no plans to link iNaturalistUK data directly to the NBN Atlas, over the coming months the BRC will be working with the National Recording Schemes to facilitate the integration of iNaturalistUK data within the schemes. Part of this support may include ways in which iNaturalistUK data could be added to the NBN Atlas, if this is something the schemes wish to do.

The MBA will be building on its extensive experience in coastal BioBlitz events to increase the wildlife records that are openly available. The NBN Trust aims to encourage greater participation in wildlife recording, particularly for groups with little previous experience. More information on the NBN website.

NBN Atlas updates

Over the last six months the records and species searches on the NBN Atlas have been running slowly and often failing to return results with a timeout error. The two searches (records and species) run off separate Solr indexes and in February we engaged a Solr Specialist company to perform an audit on our current Solr implementation and make recommendations on how to improve the performance and stability of the NBN Atlas searches.

The recommendations made relate to the design of the index (schema) and the size and number of the servers used to serve the index. With the help of the ALA (Atlas of Living Australia), we are investigating whether we can include the schema

changes in the process that builds the index. We will keep you up to date with the progress via Network News and the NBN forum.

We will make changes to the size and number of the servers used to serve the index in May once our current AWS (Amazon Web Services) infrastructure can be restructured.

We apologise for these recent problems and would like to assure you that we are doing all we can to minimise any further issues. As always, thank you for your patience and support.

Helen Manders Jones has joined the team as a contract developer to support Justin, our Systems Developer, in the on-going bug fixing, support and maintenance of the NBN Atlas. Helen has over 20 years' experience working as a Java developer.

Senior Java Developer Recruitment

The NBN Trust is still looking for a Senior Java Developer to lead its NBN Atlas development team. This permanent role will require problem-solving skills and creativity to design and develop high-end technology solutions for the NBN Atlas. The post holder will be instrumental in shaping how biodiversity data is published in the UK inputting their ideas, thoughts, and solutions. More information and how to apply can be found on the NBN Trust website.

NBN Atlas Citations

We have created a bibliography to show where NBN Atlas data have been used in publications. You can help us keep track of NBN Atlas use, by sending us the details of your own work (scientific journal, report, book chapter, thesis etc.) via an online form.

Launching the NBN Awards for Wildlife Recording 2021

Nominations for this year's NBN Awards will open on 4 May. As usual, there will be five award categories:

- NBN Award for Wildlife Recording – Terrestrial (open to individuals 21 years +)
- NBN Award for Wildlife Recording – Marine (open to individuals 21 years +)
- NBN Group Award (no age restrictions)
- NBN Young Person's Award (open to individuals aged 11-20)
- NBN Newcomer Award (open to individuals 21 years +)

Nomination forms will be available from the NBN Trust website soon. We will also be publicising these NBN Awards via social media and 'Network News'.

These annual national awards started in 2015, and were previously known as the UK Awards for Biological Recording and Information Sharing. They were originally developed by the NBN Trust, the NFBR and the Biological Records Centre.

Lichen named after John Sawyer

A new species of lichen has been named in honour of former NBN CEO John Sawyer, who tragically died in 2015. *Opegrapha sawyeriana* (Coppins sp. nov.) is one of three species of lichenicolous *Opegraphas*. lat. that are newly described in the paper "Notes on lichenicolous species of *Opegraphas*. lat. (*Arthoniales*) on *Arthoniaceae* and *Verrucariaceae*, with a key to British and Irish lichenicolous *Opegraphaceae*". More details on the NBN website.

Local Environmental Records Centre Spotlight

Each edition the NFBR newsletter celebrates one of the Local Environmental Records Centres [LERCs] in the UK. These organisations are centres for the collation, management and dissemination of biodiversity data on a local scale, making biodiversity information available to decision makers throughout the UK, alongside supporting Biological Recorders in a myriad of ways.

Answers provided by Andy Slater, Biodiversity Information Officer.

EcoRecord covers Birmingham and the Black Country (Dudley, Sandwell, Walsall and Wolverhampton). This includes parts of VC37, VC38 and VC39.

Birmingham and the Black Country is a predominantly urban area interwoven with a diverse network of important wildlife sites including canals, nature reserves, disused railway lines, heathlands, ancient woodlands, old quarries, Victorian parks and encapsulated areas of ancient countryside.

We are hosted by The Wildlife Trust for Birmingham and the Black Country and our office is located in The Centre of the Earth - the Trust's purpose-built environmental centre next to the canal in Winson Green, just 1.5 km from Birmingham City Centre. The office grounds, though quite small, include a diverse mix of habitats including ponds, woodland areas and a created wildflower meadow which now has four species of orchid. About 540 species have been recorded onsite including common buzzard, smooth newt, marbled white butterfly and red-tipped clearwing moth. Otters have also been recently recorded along the adjacent canal.

Tell us a bit about your LERC

EcoRecord was set up in 1991 as a joint initiative by English Nature, Birmingham City Council, the four Black Country local authorities, The West Midlands Joint Data Team and has been part of the Wildlife Trust for Birmingham and the Black Country throughout its history. EcoRecord was set up with the aim to collate, store and make available information on all aspects of wildlife and habitats in Birmingham and the Black Country, including Wildlife Trust site surveys, West Midlands County Council habitat information, and species records collected by local naturalists.

Craig Slawson was the first manager of EcoRecord and was instrumental in helping to set up and develop the record centre in its early years. Craig left in 2001 to set up Staffordshire Ecological Record (Staffs LERC) just across the border.

EcoRecord has over 2.7 million species records in our database of over 10,000 different species, as well as holding the area's habitat and local sites resource and continues to develop and deliver a range of critical data products and services which are key to making good decisions regarding Birmingham and the Black Country's natural environment. We are currently involved in the development of the Nature Recovery Network Map for the conurbation, for which the wealth of evidence we hold is key.

Tell us about your team

EcoRecord's team has two members of staff, Sara Carvalho who joined EcoRecord in 2001 as the Local Environmental Records Centre Manager and Andy Slater who joined the team in 2007 as Biodiversity Information Officer. EcoRecord is supported by a range of volunteers, who amongst other things are instrumental in helping with the verification of records, carrying out surveys and producing publications.

*EcoRecord office grounds © **Andy Slater***

We work also work closely with our colleagues at the Wildlife Trust, particularly in the conservation department as well as our neighbouring West Midlands record centres. The EcoRecord partnership includes a wide range of partners which include all the original local authority partners, the Environment Agency and others.

Sara is interested in freshwater invertebrate surveying, while Andy has now been surveying hoverflies and other Diptera for several years.

Tell us about the local recording scene

Birmingham and the Black Country (B&BC) has a vibrant local recording scene including several specialist groups and individuals. EcoRecord works with and supports the local recording groups who are a vital source of both records and expertise.

The B&BC Botanical Society were officially formed in 2012 following the successful publication of The Flora of Birmingham and the Black Country though the group and has long been actively involved in recording, working closely with EcoRecord. Since then the group have held a regular program of field meetings and we are currently working together on the final stages of publishing a new book – the Flora of Sutton Park.

The B&BC Bat Group – BrumBats was originally established in1985 and re-launched in 2006. The group work to record and conserve bat populations in B&BC. They have recently published a provisional Batlas for the area and have been working to fill in recording gaps in the existing data.

The B&BC Amphibian and Reptile Group monitor the distribution and status of amphibians and reptiles in the area and are currently undertaking a project to map, restore and enhance an important Great Crested Newt Corridor.

The Sandwell Valley Naturalists was founded in 1975 by 27 naturalists, both amateur and professional, who were concerned about the future of the Sandwell Valley. They work to document and protect the wildlife of the site and count among their members a number of expert naturalists.

We also work and maintain links with West Midlands Bird Group, West Midlands Butterfly Conservation and the B&BC Mammal Group as well as local Natural History Societies.

We have worked with groups, local recorders and the Wildlife Trust to help produce atlases for plants, bats, mammals, reptiles and amphibians, hoverflies and shieldbugs. Most of these are available to download from our website.

Tell us about how you support local recorders

We support the local recording network in a variety of ways, from helping to organise and promote field events and meetings, supporting the production of newsletters and atlases and helping with mapping and digitising records.

We run a series of regular campaigns focused on the recording of specific taxon groups. In March we run SpawnWatch, which encourages people to report sightings of frog or toad spawn, while in summer we have HoverWatch, focused on recording hoverflies and in early autumn we have Damsels & Dragons focused on recording dragonflies and damselflies.

After a really successful first year, we are also now preparing for the second year of running the Birmingham and the Black Country City Nature Challenge and really looking forward to another great (long) weekend of celebrating wildlife recording (more about this in the Highlights section!).

We maintain a very active Facebook group, where local recorders post photos of wildlife they're seen, as well as any identification queries they might have. We are also active on Twitter and Instagram and we send out a regular email newsletter to our recording network.

What are the top three sites you would recommend to visiting wildlife recorders?

Sutton Park (SSSI), SP100970, is one of the largest urban parks in Europe. Its origins lie as a royal medieval deer park and it supports a rich mix of important habitats including lowland fen, heathland, acid grassland, lakes and ancient woodland. Entomologists Steven Falk and Chris Kirby-Lambert carried out a survey of the site in 2019 and concluded that it probably supports the most important valley mire invertebrate assemblage within the British Midlands.

More information online here.

Sandwell Valley (LNR), SP032927, is an oasis of green in the centre of an essentially industrial area. The valley has ancient woodland, parkland, meadows and numerous pools. The wildlife of the valley has been very well documented over the years and it is known particularly for its bird and invertebrate interest.

More information online here.

Wren's Nest (SSSI), SO935920, was the first National Nature Reserve in England designated for its solid geology. The site is known for the quality of its fossil beds, mining features and geological structures as forms part of the recently designated Black Country UNESCO Global Geopark. Wren's Nest is also known for the excellent limestone flora in its quarries as well as grassland, woodlands and other habitats. The limestone caverns are also regionally important bat roost sites.
More information online here

Any highlights or achievements you would like to share from the past year?

As you can imagine, like most our activities last year were impacted by the Covid-19 pandemic. In 2020 EcoRecord signed up 'Birmingham and the Black Country' to take part in the City Nature Challenge for the first time.

The City Nature Challenge is an annual competition between cities all over the world to see how many wild species their citizens can spot over the space of four days. It began in 2016 as a competition between San Francisco Bay and Los Angeles County and by 2018 the CNC had gone international.

We enlisted the Wildlife Trust and Birmingham Museums to act as co-organisers and we engaged with as many other organisations and recorders as possible. Over the four days of the challenge (24th – 27th April) recorders in our area collectively made over 16,000 observations of over 1,300 different species – meaning B&BC finished 13th in the world out of the 244 city areas taking part. One of the reasons we feel the event was so successful in engaging recorders, was that the recording platform used by the challenge - iNaturalist - was quite easy for beginners to pick up. The recognition software in iNaturalist helps recorders to identify what they've seen and then a community of others users help to verify it.

Contact info

Website: www.ecorecord.org.uk

Species Atlases: www.ecorecord.org.uk/index.php?q=content/species-atlases

Email: enquiries@ecorecord.org.uk

Facebook: www.facebook.com/EcoRecording

Twitter: https://twitter.com/EcoRecording

Instagram: www.instagram.com/ecorecording/

The Birds of Wales/Adar Cymru

Daniel Jenkins-Jones

Your chance to buy this landmark book at a pre-publication price and save yourself £20.

It is more than 25 years since the first and only avifauna was published for all of Wales and much has changed since then. This summer a new book, The Birds of Wales/Adar Cymru, will be published by Liverpool University Press and the Welsh Ornithological Society (WOS).

Published on 1 July, this book charts the fortunes of birds in Wales, from the prehistoric to the present day. Edited by volunteers from WOS and supported by LERC Wales, this new avifauna pools the knowledge and data gathered over the last century of all 451 wild bird species recorded in Wales, and also includes shorter accounts of more than 100 non-native species recorded 'in the wild'.

The accounts for each species draw on the latest research and expertise from those who have studied birds in Wales and, of course, the records submitted to Local Environmental Records Centres and to groups like the Gwent Ornithological Society, the Gower Ornithological Society and the Glamorgan Bird Club. As well as all the information you'd expect in each species account, the book is also full of fascinating titbits uncovered by its authors. For example, which species may have nested at probably the highest ever altitude in Wales and England.*

The opening chapters describe, for the first time, the history of bird recording and conservation in Wales and the environmental context, such as the impact of land-use, that has resulted in big changes for our birds. Knowledge of many species has improved thanks to monitoring by volunteers, and information from all the major recording schemes has been used by authors of the species accounts, many of whom are acknowledged experts on the species. It will be no great surprise that only a quarter of breeding species have experienced an improvement in status since 1900.

The authors have explored the archaeological record of Wales as well as historic records in English, Welsh and Latin. It traces the earliest evidence, such as Barnacle Geese that bred in Pembrokeshire before the last Ice Age and the footprints of Common Crane preserved in Severn Estuary mud around 7,000 years ago.

Richly illustrated with over 200 stunning images by some of the country's leading nature photographers and illustrators, the book also anticipates what may occur in the coming decades and it looks ahead to some of the changes yet to come during the 21st century; some projected by an unstable climate and others dependent on decisions made by politicians about farming, forestry and renewable energy.

It is a once-in-a-generation statement of the birds of Wales and it will have an essential place on the bookshelf of everyone with an interest in birds in Wales.

The Birds of Wales/Adar Cymru is published, in English, by Liverpool University Press on 1 July 2021, priced at £45 (hardback, 608 pages). However, it can be ordered at the **pre-publication price of £25** (plus p&p) until 30 June, using the code **WALES50**.

Please visit www.liverpooluniversitypress.co.uk/r/birds-of-wales / call 07766 472078.

** A Wren was once reported breeding 50m below the summit of Snowdon, Caernarfonshire, at an altitude of about 1,035m.*

The Birds of Wales
Adar Cymru

EDITED BY Rhion Pritchard, Julian Hughes, Ian M. Spence, Bob Haycock and Anne Brenchley

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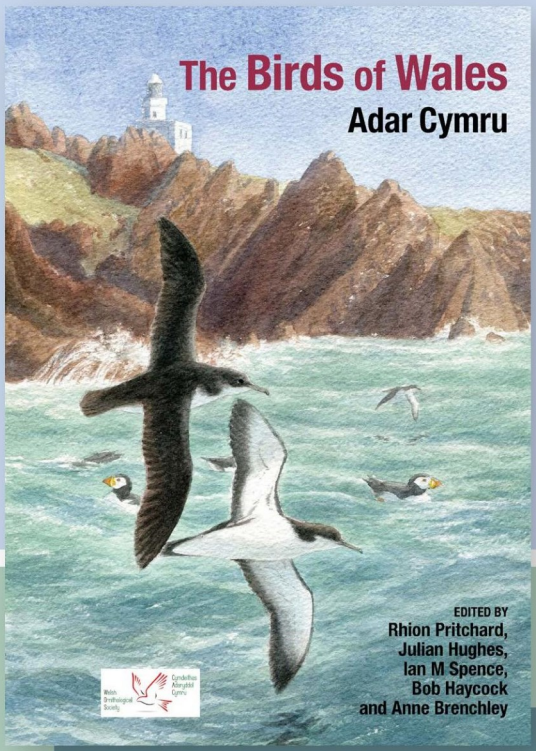

This is a once-in-a-generation book on the state of birds in Wales.

July 2021 • Over 200 images • 608 pages
Hardback ISBN 9781800859722

It is almost 30 years since the first avifauna was published for all of Wales and much has changed.
We now have a better understanding of how humans have affected birds of Wales, particularly the twin challenges of land-use and climate change.

The Birds of Wales tells the stories of all the birds that have been recorded here, whether common or rare, and looks forward, anticipating what may occur in the coming decades.

PUBLISHED BY LIVERPOOL UNIVERSITY PRESS
ON BEHALF OF THE WELSH ORNITHOLOGICAL SOCIETY
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Welsh Ornithological Society
Cymdeithas Adaryddol Cymru

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Oxfordshire Nature Recovery Network

Robbie Still, TVERC

The Nature Recovery Network (NRN) is an ambitious national plan to put space for nature at the heart of our farming and planning systems, and to bring nature into the places where most people live their daily lives. It is a major commitment in the UK Government's 25-Year Environment Plan, intended to improve, expand and connect habitats, to address wildlife's decline and provide wider environmental benefits for people. The concept for the NRN is simple; existing protected sites represent the best areas for wildlife, and should therefore form the core of any network. But to support nature's recovery, action is required to extend and link these existing sites, both to support wildlife, and to recover the range of economic and social benefits that nature provides. In Oxfordshire, our ambition is to double the amount of land of high value for nature by 2050 (Oxfordshire Plan 2050). Future local development plans will need to consider in detail how to plan for more nature.

Oxfordshire already had the foundations for a local NRN. Since 2006, Conservation Target Areas have been established as the spatial component of Oxfordshire's strategic approach to biodiversity. They are concentrations of priority habitats and species, and include surrounding land that can buffer and link these habitats and provide opportunities to create new sites. A draft Nature Recovery Network map for Oxfordshire has been created (right) and consists of three zones:

The Core zone (in deep green) includes the most important sites for biodiversity in Oxfordshire and includes all nationally and locally designated sites, nature reserves, priority habitats and ancient woodland.

The Recovery zone (in emerald green) comprises of Conservation Target Areas, Important Freshwater Areas and additional areas added to provide better habitat connectivity.

The Wider Landscape zone (in light green) covers the rest of the county, recognising the important contribution that agricultural and urban landscapes beyond the Recovery zone can make to nature's recovery.

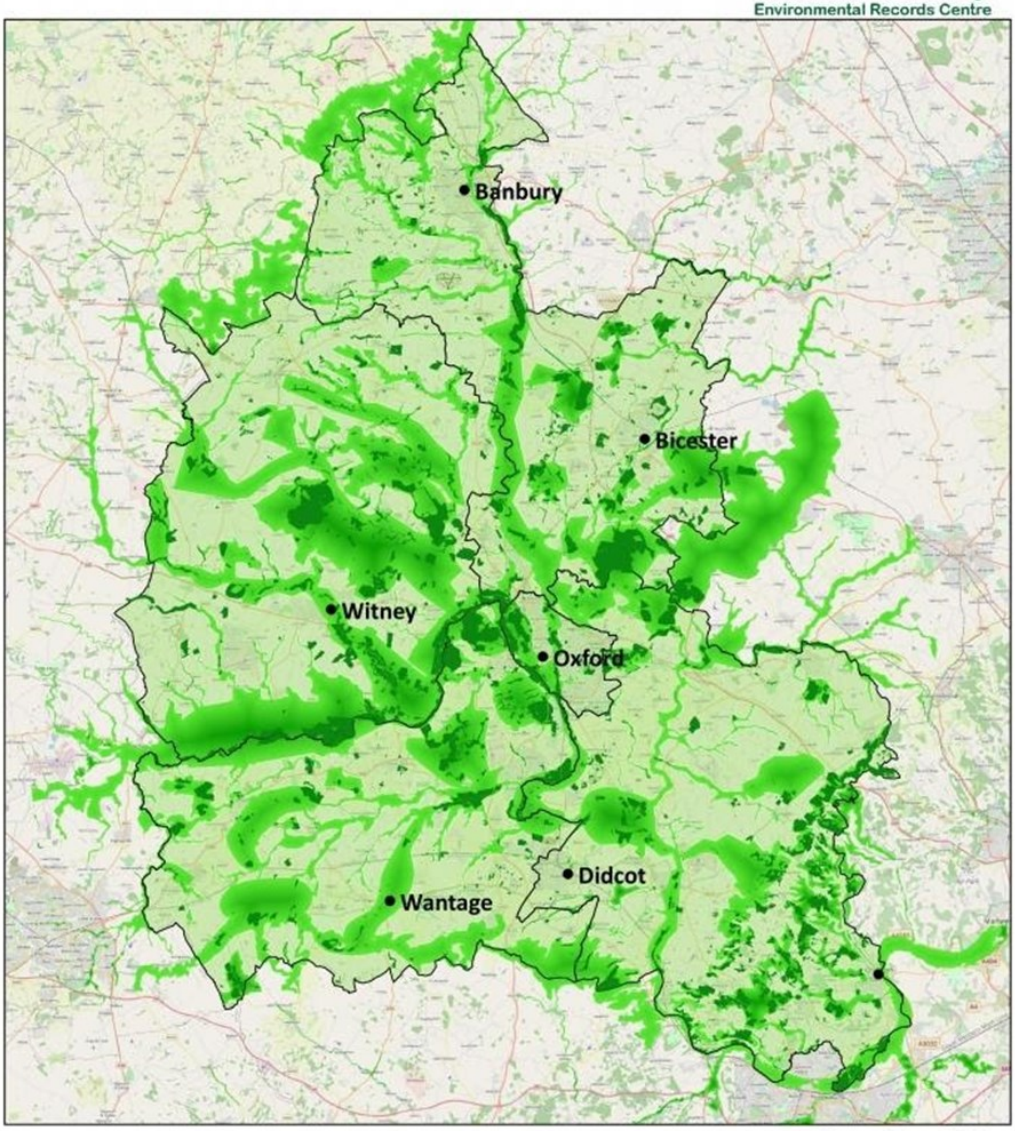
Oxfordshire's Biodiversity Advisory Group has proposed a number of policies for the Oxfordshire Plan 2050. These include:

- Support for the development of an Oxfordshire Nature Recovery Strategy.
- Requiring developments in the three nature recovery zones make a positive contribution to nature's recovery.
- Giving the Nature Recovery Network significant weight in planning decisions
- Avoiding major new built development in the Recovery zone.
- Protecting and enhancing habitats of particular importance for nature and strengthening ecological networks.
- Focusing on improving nature in the Recovery zone, including the establishment of large nature areas of at least 5000ha in size.
- Investing more in monitoring the change in nature so that it can be seen if the improvements are actually being achieved and action taken if not.

You can find out more about Oxfordshire's Nature Recovery Network here, and you can keep up with the progress via TVERC's newsletter and social media.

Draft Oxfordshire Nature Recovery Network

Thames Valley Environmental Records Centre



Key

0 5 10 km

Nature Recovery Network
- Core Zone
- Recovery Zone
- Wider Landscape Zone

Boundaries
- District Boundaries

*Leptocerus interruptus: a100 year gap in records in Gloucestershire © **Steve French***

Uninvited Visitors

Steve French

Anyone who has run a moth trap regularly will know that moths are not the only things attracted to light. The overnight catch invariably comes with a generous addition of flies, beetles, wasps and other critters. In fact it's not just insects that make it into the trap: opportunistic birds in search of a hearty breakfast, like Blue Tits and Wrens, will also find their way in through the entrance if you don't get to the trap before dawn in the summer months.

For a couple of years I took little notice of these "Intruders" and certainly made no attempt to record them. It was only when I began to confuse some of the smaller caddis flies with micro moths that I began to sit up and pay attention. In June last year one Caddis in particular caught my eye. I thought I had managed to identify it as an Athripsodes species. I duly recorded it as such on iRecord and posted it with an accompanying photograph.

The beauty of iRecord is that your sightings are [*often!* Ed.] verified (or corrected!) by a species expert. In this case it was Dr. Ian Wallace of the Freshwater Biological association. My identification, of course was completely wrong, but in a good way. Ian replied: "*Leptocerus interruptus*: Well done, a national rarity that could have come from the Leadon but has most likely come from the Severn where it has been confirmed as a larva only last year after a gap of over 100 years. The winds have been fickle so difficult to be more sure to its origin. Many thanks to you. I enjoy all verifying but every now and then it is that more satisfying when a real special one turns up".

With this surprising and rather encouraging news, my interest in the trap bi-catch began to take on a more methodical approach. Within a period of a couple of months I had managed (with a good deal of assistance) to record and identify nearly a dozen species of Caddis. But what proved to be even more fascinating and rewarding was my attempt at the identification of parasitoid wasps or Ichneumonids.

Ichneumonid wasps account for almost 10% of all British insect species. They can be difficult to identify, with around 2300 variants, all looking rather similar! As with the Caddis, I have had some help in identifying these. Dr Gavin Broad, Curator of Insects at the Natural History Museum, runs a Nocturnal Ichneumonid Recording Scheme and has been incredibly helpful in providing IDs. So once I began to piece together a list, I also began to understand their relationship with moths. In fact, I soon became aware that the study of these insects may even assist with predicting the likelihood of a particular moth being resident in the same area.

Let me explain; it seems that different ichneumonids have a preference for particular types of moth larva to parasitise. There are those that are happy to feast on any members of a specific moth family. These include:

Ophion obscuratus © **Steve French**

Ophion obscuratus (left) - likes a wide range of Noctuid moths.

Netelia inedita - a preference for Geometrids.

Zele chlorophthalmus - much prefers a juicy Pyralid larvae.

And then there are those that are just very particular about what they like:

Enicospilus combustus - Dot Moth

Ophion luteus - Heart & Dart and Turnip moths

Ophion minutus - Spring Usher

Stauropoctonus bombycivorus - Lobster Moth

The list goes on. And if you are really lucky you may find a *Lissonota setosa* which would be a clear indication that you may have the fabulous Goat Moth nearby!

My purpose with this article is not to divert people away from moth recording but rather to point out that the bi-catch may also be worthy of note and that some of these may even enhance your understanding of the moths around your garden. So if you study moths and you have the time, please take a closer look at the other insects in your trap. You may just have something special in there.

If you need help with identification there is plenty of assistance online with websites and Facebook pages dedicated to genus specific insect groups. An excellent starting point on Facebook would be the Moth Trap Intruders group where both Gavin Broad and Ian Wallace are on hand to help with your ID queries. If you need any help accessing this or just want some general information then please email me at frenchsw@icloud.com.

*Least Carpet, on the increase (+131%) © **Teresa Frost***

Britain's larger moths decline by a third over 50 years

*Simon Williams, Centre for Ecology & Hydrology**

Populations of Britain's larger moths have declined by a third over the past 50 years, according to a new report. The State of Britain's Larger Moths 2021 has been compiled by Butterfly Conservation in partnership with Rothamsted Research and the UK Centre for Ecology & Hydrology (UKCEH).

Changes in populations of species in Britain between 1968 and 2017 have been estimated based on the analysis of tens of millions of records gathered through the Rothamsted Insect Survey and the National Moth Recording Scheme. The report says the total abundance of larger moths decreased by 33% between 1968 and 2017. The extent of the losses has worsened in the past decade. The previous report, in 2013, showed total abundance of Britain's larger moths decreased by 28% between 1968 and 2007.

Dr Richard Fox of Butterfly Conservation, lead author of the report, says moths are important pollinators of many plants, including wildflowers, and also provide essential food for a variety of animal species, including bats and many familiar birds.

He explains: *"This decline is worrying because moths play a vital role in our ecosystems. Because moths are dwindling, we can be pretty sure that other wildlife are also in decline and that our wider environment is deteriorating."*

Dr Colin Harrower, Spatial Data Analyst at UKCEH, who contributed to the evaluation of abundance data from the 50-year period, says: "*Our analysis of the millions of records showed that, over the past 50 years, four times as many moth species decreased in abundance as increased. It is possible that our rarest species, for which we cannot easily produce reliable trends, are facing even greater threats to their populations.*"

Larger (macro) moths in Britain, represent almost 900 out of 2,500 moth species in Britain, with the remainder classed as micro-moths. The causes of declines in

*This article originally appeared on the CEH website.

larger moths' abundance – which were greater in the south (39%) than northern Britain (22%) – are varied, though all are related to human activity. Habitat destruction and deterioration resulting from changes in land management and chemical pollution are major causes. Artificial light at night also has negative effects, while climate change is also a significant factor. However, while warmer temperatures have resulted in declines for moths adapted to cooler climates, some species have benefited.

*Golden Plusia -58% © **David Slade***

Species showing significant declines include Stout Dart, whose numbers fell by 81% over an average 10-year period, as well as Golden Plusia, down 58%, and Garden Dart and V-Moth, both down 54%. Moth species experiencing large rises in populations include Buff Footman, which increased at a rate of 237% per 10-year period, as well as Least Carpet, up 131%, and Orange Footman, up 115%.

*Orange Footman +115% © **David Slade***

While abundance trends showed significant overall decline, analysis of long-term distribution data from the National Moth Recording Scheme showed a more balanced picture. The report found the geographic range of 32% of species of larger moths in Britain declined between 1970 and 2016 and 37% increased, with the remaining 31% showing no significant change.

The Grey Mountain Carpet, for example, saw an 81% decrease in distribution, while a lack of sightings of the Pale Shining Brown since 2017 has raised concerns that the moth may have been lost from Britain as a resident species. By contrast, the Jersey Tiger moth, previously confined to south Devon, has spread across southern Britain in recent decades, while the Devon Carpet moth has undergone a rapid range expansion from south-west Britain northwards to reach southern Scotland.

*Jersey Tiger © **David Slade***

As well as analysing trends, The State of Britain's Larger Moths 2021 also contains numerous examples of conservation success, with work by Butterfly Conservation, its partners and volunteers reversing declines in species that were at risk of extinction.

The full report is available to download on the Butterfly Conservation website.

*Elephants on Parade: Elephant Hawk-moth is sure to appear during Wales Garden BioBlitz © **Elaine Wright***

News Snippets

Elaine Wright

A round up of some news from the UK biological recording community and other items of interest.

Tom August has written a blog for Natural Environment Research Council about the thought process behind moth ID app What's Flying Tonight and how projects can engage and enthuse audiences by interpreting data in new accessible ways.

Robin Crowther has written a blog for the Natural History Museum about digitising their *Ephemeroptera* (mayflies), *Plecoptera* (stoneflies) and *Trichoptera* (caddisflies) collection.

After a successful 2020 event, Wales Garden BioBlitz is returning on 29th May 2021. Welsh wildlife lovers are all invited to record the wildlife in their garden and help contribute to a national nature snapshot with LERC Wales. More information can be found on the SEWBReC website.

Buglife launched their complete B-Lines map for the UK, developed over 10 years with the aim to reconnect the best remaining wildflower-rich habitats across the country. You can re-watch the launch on YouTube and find out more on their website.

New and updated Resources

Steven Falk continues to update his excellent Flickr site, which provides semi-comprehensive coverage of many British insect groups.

Tristan Bantock also continues to add to British Bugs, including the recent addi-

tion of new species accounts for 21 Miridae and 18 Lygaeidae.

X-Polli:Nation have launched a package of new pollinator recording surveys, identification tools and species-specific planting tips & an accompanying package of resources for schools to learn about and take action for pollinators.

Tanyptera Trust have organised many fantastic online invertebrate courses during the pandemic, most of which can be found on their YouTube channel.

British Lichen Society have added species accounts of common lichens to their website to assist with learning and teaching.

An update to iRecord Butterflies app is imminent, aiming to improve functionality and add features such as the ability to record eggs, larvae and pupae. Current users are warned to submit existing sightings as soon as possible, as unsubmitted sightings will not be transferred to the new version.

The National Plant Monitoring Scheme have some new resources available plus several training webinars scheduled for 2021.

The Lonchaeidae (lance-flies) Study Group now has a webpage providing updates and resources to help with identification. You can also send specimens to Nigel Jones for confirmation.

SEWBReC have created YouTube playlists of the many excellent online courses that have been run by various organisations during the pandemic; from moths to mosses, there is something new for every recorder to discover.

Scientific Papers

Steven Falk has published A Review of the Pollinators Associated with Decaying Wood, Old Trees and Tree Wounds in Great Britain. You can find other papers by Steven on ResearchGate.

Mike Sherwing and James Vafidis explore an interesting new recording method in the In Practice article Using UAV-mounted thermal cameras to detect the presence of nesting nightjar in upland clear-fell, plus a video summary.

Another innovative method of gathering bird data is discussed by Nadja Weisshaupt, Teemu Lehtiniemi and Jarmo Koistinen in their IBIS paper Combining citizen science and weather radar data to study large-scale bird movements.

Recording Scheme News

Denise Wawman and Erica McAlister have set up a Hippoboscidae and Nycteribiidae Recording Scheme.

Denise Wawman is also running a "2021 Mapping the UK's Flat Flies Project", asking bird ringers to post her any flat fly specimens they come across. You can contact her on Twitter @SomEcoWarrier to get involved.

Liam Olds has set up an Oil Beetles Recording Scheme, also on Twitter.

National Forum for Biological Recording

The National Forum for Biological Recording is the premier UK organisation for practitioners engaged with biological recording across the UK. Membership includes individual naturalists, national organisations and recording societies, local records centres and their staff. This gives it a unique perspective and an important role.

Whether you are an experienced naturalist or taking your first steps in biological recording, we want to hear from you.

To offer an article for a newsletter, please contact our Newsletter Editor:
Elaine Wright on editor@nfbr.org.uk

To join the NFBR, please contact our Membership Officer and Treasurer:
Clare Langrick on membership@nfbr.org.uk

For all other enquiries about NFBR please contact our Chair:
Sarah Whild on chair@nfbr.org.uk

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