# NFBR

NATIONAL FORUM FOR BIOLOGICAL RECORDING

## Newsletter 50 – September 2015


Biological recording in action during the 2015 NFBR Conference

# Editorial

This is the 50th NFBR Newsletter! As usual we have an excellent selection of articles and news – the world of biological recording is as busy and fast-changing as ever.


It was good to see so many NFBR members at our conference back in April, and welcome to the substantial number of new members who joined us at the conference. Feedback indicated that the conference was a great success; thanks to all our excellent speakers, and to the many people who helped organise the conference. Paula Lightfoot deserves a special mention as the driving force behind the conference planning and NFBR is most grateful to her, as well as to the British Ecological Society for their considerable help and financial support. We are planning to get a conference report circulated before the end of the year as a record of that event, and plans are under way for our 2016 conference.

This issue has a focus on the collecting of data on pollinators (pages 8–14), which brings together information on a range of the projects and organisations that are contributing to the conservation of pollinators, and to the government's National Pollinator Strategy.

It's not every issue that can announce the birth of a new national recording scheme, so we are pleased to welcome the launch of a scheme devoted to the Calliphoridae, a family of flies that have some intriguing life-histories and are of considerable medical and forensic importance (page 4). Equally pleasing is an update on progress towards a new national atlas of mammals, the publication of which is keenly awaited (page 15).

NFBR has always worked to represent the interests of recording schemes as an integral part of biological recording, and we are looking at ways of improving our liaison with the schemes. Thanks to members of BSBI we have some good insights into how this might be done (page 16).

The Tomorrow's Biodiversity project at the Field Studies Centre is running some workshops to introduce biological recording to new participants, and it is good to hear that the first of these is fully booked already (page 19) – this, along with news that records on iRecord and iSpot are into the millions, is surely a sign that enthusiasm for biological recording is at a high. And our news pages carry details of new and exciting projects from NBN and from local environmental records centres, so there is no shortage of activity for people to take part in.

Finally we have a report on a successful first year for the Identification Trainers project at the Natural History Museum, with details of how you can apply for the new traineeships offered for the second year.

Thanks to all who have contributed words and images for this issue. Our next one is due in early 2016, so please get in touch if you have news, reports, articles or photos to share. Contact me, or share your views more widely via our email discussion forum, our Twitter feed, or on our Facebook page. And don't forget to check in to the NFBR website.

*Martin Harvey, July 2014*
*editor@nfbr.org.uk*

The **deadline for sending in articles for newsletter 51** is
**1 December 2015**

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Cover photo: NFBR members recording wildlife at Hatfield Moors SSSI as part of the 2015 NFBR Conference (photo by Paula Lightfoot).

# Launch of the Calliphoridae Recording Scheme

*by Olga Retka*

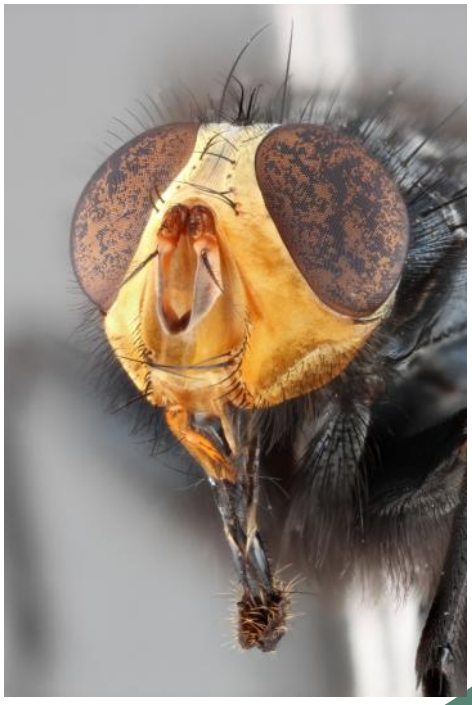
*Calliphora vomitoria* – a common bluebottle, the orange haired "ginger beard" on the postgena and lower parts of genal dilation (lower part of the head) are characteristic; a species of forensic importance.

The Calliphoridae (blowflies) are represented in the UK by 38 species belonging to 7 subfamilies and 14 genera. They are highly variable in appearance and biology.

The most familiar blowflies are bluebottles and greenbottles, easily distinguished by their characteristic metallic colour. Then there are cluster flies (Polleninae) with their unusual wavy golden hairs on the thorax. Not all blowflies are so distinctive, however, species in the subfamily Melanomyinae are more like woodlouse flies (Rhinophoridae) in appearance. *Eurychaeta palpalis* can be easily mistaken for a flesh fly (Sarcophagidae) and *Stomorhina lunata* even resembles a hoverfly (Syrphidae). The greenbottles also have some look-alikes among the Tachinidae and Muscidae. Correct identification is not always easy and the keys that are available are either expensive, outdated, or difficult to understand. The lack of sufficient identification guides may be one of the reasons why blowflies, which on the whole are widespread and common, have been so under-recorded.

Although the family as a whole is not well recorded a lot of research has been done on the species that are forensically or medically important. Adult blowflies feed on nectar and play a role as pollinators, but the larval biology is more diverse. Larvae from a number of species feed on carcasses and can be used to establish the post mortem interval, which is the amount of time that has passed since someone's death. Other blowfly larvae are parasites of earthworms, grasshoppers, slugs, snails, etc. and in larger animals can cause myiasis. This is a terrifying condition in which eggs are laid, and larvae feed on a live host. The most well-known form of it is sheep strike, but they can affect other animals and humans. The more we know about the blowflies, the better we can use their potential and minimise their negative impact. Some larvae are being used in medicine to clean wounds. Others are farmed commercially for fishing bait or as a source of protein.

*Cynomya mortuorum* – a species of forensic importance that may also cause myiasis.



The scientific importance of blowflies is obvious, which is reason enough to begin a recording scheme. One of the first goals for the scheme is producing a key that will be accurate and reliable, but also easy to use and affordable. It will be a tool for amateur entomologists as well as professionals with limited knowledge of Calliphoridae. A draft key to subfamilies and species of forensic importance has already been produced. This key focuses on characters that do not require special preparation, so avoids examination of genitalia.

Characters in the key are well illustrated with drawings and photographs to minimise identification errors that could result from the misinterpretation of written descriptions. The key has been based on and uses features adopted from Rognes (1991), Erzinçlioglu (1996), Draber-Mońko (2004) and Whitworth (2006). The photographs have been produced using professional equipment kindly provided by Angela Marmont Centre at the Natural History Museum. The aim for the near future is to add the remaining (non-forensic) species to complete the Calliphoridae key.

*Pollenia rudis* – a cluster fly, with characteristic wavy golden hairs.

The project has been met with great enthusiasm so far and has been widely supported by the entomological community. I have received a great amount of help and advice on collecting, preparing and photographing blowflies, and on the practicalities of running a Recording Scheme, for which I am truly grateful. For my part I have been assisting with specimen identification, especially photographic material published via social media such as Facebook. This is an amazing source of data, happily shared by enthusiasts. Once identified, the fly records are being sent to iRecord. Sometimes it is impossible to provide an accurate identification based on the photograph; keeping specimens is always advised.

The other great source of data are museums and collections. So far data have been collected from the Booth Museum (Brighton) and the Natural History Museum in Oxford. The aim for the coming years is to collect of all of the blowfly data from UK museums. In addition, I am hoping to encourage a number of volunteers to set up blowfly sampling stations across UK. The estimated time span for this survey project is one year (potentially 2017) with traps being used for few days each month. The traps will be simple, self-assembled and cheap devices, using chicken liver as a bait. The samples will be stored in alcohol (to preserve DNA for future research), identified and records used to model the spatial and temporal distribution of blowflies of forensic importance. As some species are only found in specific geographical locations and environments, they can be used in forensic cases where body movement is being suspected.

*Lucilia sericata* – a common greenbottle, a species of forensic importance that also causes sheep strike.

In the near future I am planning to set up a website where various information on blowflies could be found, including tips on identification, keys, recording, collecting, biology and other related topics. In the meantime I am happy to receive records via iRecord or email (aruma@wp.pl). If you have any questions, do not hesitate to contact me; I am looking forward to hundreds of new records!

# Data sharing from an ecological research perspective

*by Charlie Outhwaite*

This article first appeared as a blog post on the DNAdigest website: dnadigest.org/ecological-perspective-on-data-sharing/.

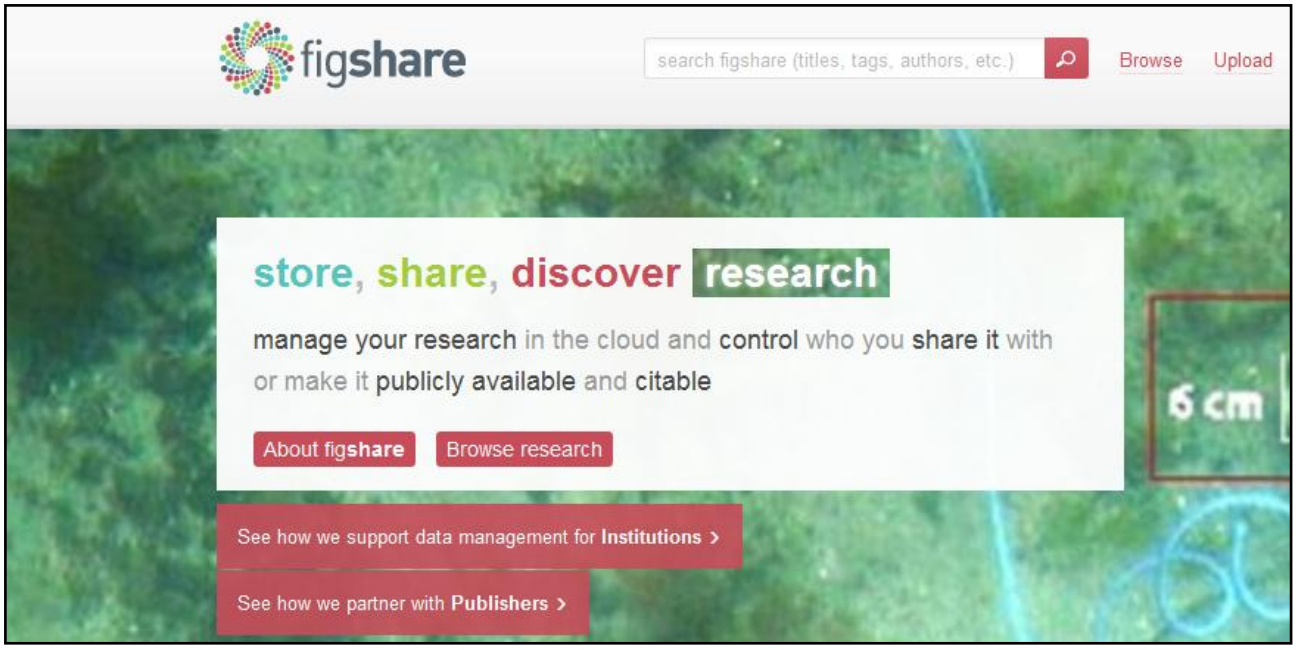
DNAdigest is a not-for-profit organisation that aims to educate, facilitate and engage on issues regarding access to genomic data.

The field of ecology is a vast and varied one. As a result, the types and quantities of data produced differ hugely. Whether a study is small in scale, such as a field or lab based project, or a large, country or global scale, big data study, the amount of data that could be made available is enormous. Yet the field of ecology has been considered as behind in terms of its openness when compared to other areas of biology such as genomics. With such vast amounts and types of data available, sharing that data openly has the potential to boost research opportunities and open up collaboration within and between fields.

As is the case within many scientific disciplines, a major barrier for data sharing in ecology is the fear of being scooped. For this reason, many researchers would be unlikely to release their data until they have been able to complete their intended work first. This problem is exacerbated in ecology where data are often collected independently by one or a few people who gain a sense of ownership over that data. Although permissions of use and attributions can be set up, this sense of ownership can act as a barrier to data sharing. If an ecologist has spent months in the field collecting and then collating that data, they are not going to want to share it until they have had the chance to carry out all their planned analyses, and will probably then hold onto it for a bit longer, just in case!

Additional problems that are shared with other areas of research include getting credit for sharing data and actually knowing how to share data. The credit issue is starting to

"Figshare", one of several options now available for sharing research data online



be addressed by data journals where citations can be gained as a result of publishing data. With citations often referred to as the "currency" of science, bringing data sharing into this fundamental aspect of academia is key.

Are there risks from sharing data relating to protected species? (Hen Harrier photo by Ingrid Taylar via Flickr Creative Commons)

Although many options are now available for easy and hassle free data sharing, this knowledge is not widespread within the ecological community. It is also considered to be too time consuming to learn these new techniques. Options available to ecologists include (among others) figshare (figshare.com), which can be used to make data publicly available and citable; and GitHub (github.com) which allows the sharing of code, as well as the more familiar NBN and GBIF routes for biological records. The tools are available, now we need to increase the knowledge on how to use them and encourage their use in day-to-day research life. I personally think these tools should be introduced during undergraduate courses. This would ensure that future generations of researchers have the basic skills they need to share data effectively.

So far these issues are applicable to most areas of science and it is clear that efforts are being made to overcome them. However, ecological data also have unique issues. My work in particular can highlight one such problem. I use species presence data collected by volunteers to investigate changes in the status of biodiversity over time. As these data come from various organisations and groups, the views on who owns the data and whether or not it should be shared can vary. Of more importance is the fact that these data consist of precise localities indicating exactly where species have been recorded. For a common species, this shouldn't be a problem, but what about threatened or endangered species? Should their locations be openly available? Some species are protected by law and the data relating to these species cannot be used in a study which could result in the data being accessed by others. So, what would the protocol be in this case; should the dataset be openly shared which could lead to people tracking down endangered species and potentially putting these populations at risk? What other options are available? Until specific protocols are put in place which aims to understand and mitigate the potential problems with specific kinds of data, many data holders are likely to simply keep it to themselves.

The potential for data sharing within the field of ecology is great. The scale and scope of work that could be achieved would be vastly increased if a more open and sharing community was possible. However, as well as the issues that are more widely shared within science, there are a number of issues specific to ecology that need to be addressed in order for the open data movement to pick up momentum. Once these problems are understood and ways to deal with them are established, standardised ways of sharing should be more accessible and accepted within the community. Currently, however, I think this lack of data sharing is preventing the generation of new and exciting research and potentially limiting what we are able to offer from within this field.

*Charlie Outhwaite is a PhD student based at the Centre for Ecology & Hydrology. Her work looks into producing biodiversity indicators from biological records, exploring drivers behind the trends and the way species traits affect susceptibility to change.*

# Bees and pollination - building the evidence base

Pollinators, and especially bees, have really caught the imagination of the public in recent years, with regular articles in the press on the potential decline of both wild bees and honeybees, and what effects this could have on our crops and wild flowers. But do we actually have good evidence to assess how populations are faring for the 270 or so wild bee species in the UK?

Last year the government published its *National Pollinator Strategy* (Defra 2014). One of the five priority areas that were identified in the Strategy was developing actions for "improving evidence on the status of pollinators and the service they provide". This was broken down further into a series of proposals for investigating the economic value of pollination, the effects of crop protection (e.g. pesticide use) on pollinators, and the options for improving evidence on the populations of the pollinators themselves.

As part of the *Strategy* Defra awarded a research contract for designing and testing approaches to monitoring changes in the abundance, diversity and distribution of British pollinators (particularly bees and hoverflies) and pollination services to crops. This work is currently being undertaken by a team that includes scientists from the Centre for Ecology & Hydrology, Leeds University, Reading University and the Open University, expert entomologists (representing BWARS and the Hoverfly Recording Scheme, through the Hymettus consultancy), the Bumblebee Conservation Trust, Butterfly Conservation and British Trust for Ornithology.

A key element of the project involves looking at how best to build on existing survey activities to provide robust and reliable data on pollinator population change, in addition to the longer-established recording of species distributions. The final output of the project (ending December 2015) will be to set out a costed framework for monitoring changes in pollinators and pollination services across Britain into the future, with both professionally-led and volunteer-led components.

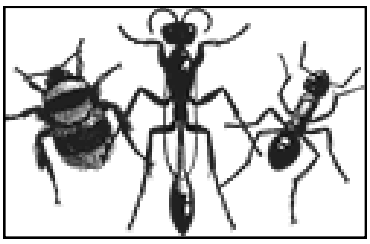
Many people and organisations have an interest in bees and other pollinators, and below we have compiled information from a range of current activities involving the recording of bees in one form or another. Some of the projects are well-established, others are new, but all are gathering information that may help us to understand what is happening to bees in particular and the broader ecosystem service of pollination.

The summaries below demonstrate the breadth of different approaches being taken to involve wildlife recorders and citizen scientists with work on bees and pollinators. The identification of bees is not straightforward, and verifying records can be a time-consuming task that often places demands on scarce volunteer expertise. Alternative approaches may allow data to be analysed at an 'aggregate' level, looking for overall trends without having to go to full identification of each species.

No doubt each approach will have its own strengths, challenges and biases, but if good communications and data-sharing are maintained we should soon have a stronger framework for generating more and better data on bees, which will help identify the best approaches to conserving pollinators both for their own sake and for the important services they provide.

Bees are not the only insects that pollinate! Many other species groups have a role to play, and a number of other recording schemes are involved in work on pollinators, especially the Hoverfly Recording Scheme. For reasons of space our feature for NFBR focuses largely on bees this time round, but that's not to downplay the importance of other species. Read on for some of the recording projects currently in progress.

## Bees, Wasps and Ants Recording Society: BWARS



*by Mike Edwards, BWARS*

The Bees, Wasps and Ants Recording Society (BWARS) exists to do just that - *record* the occurrence of bees, wasps and ants (the aculeate Hymenoptera in scientific parlance). It developed from the old Bees Wasps and Ants Recording Scheme in the early 1990s when it became apparent that a degree of self-funding would enable a greater development of the group, which, up to that point, had been entirely reliant on support (very gratefully received) from the Biological Records Centre.

The Society is open to anybody who would like to become involved in the recording of the aculeate Hymenoptera, at whatever level of expertise they have. Training to improve expertise may be obtained both formally through organised workshops and also by direct contact with individuals within the Society, many of whom are only too pleased to help a newcomer in their area, either by taking them on field trips, or by supporting their first identifications.

Beginners need to be aware that this is not an 'easy' group to name, although there are a limited number of species which may confidently be named in the field. Hence most recording, especially in the early stages, needs to be backed up by voucher material, often in the form of a dead specimen. For some species a photo is perfectly adequate, provided it shows the necessary features - which takes a level of knowledge, or good luck! It takes 2 to 3 years before the tangle of names takes good shape, but the feeling of success when you put a name to an insect, whose often complex behaviour has engrossed your time, is massive.

Although a good binocular microscope is invaluable, it is rather a large outlay for a 'first interest'. A lot can be achieved by careful use of a hand lens. Dead specimens are best mounted on an entomological pin as handling is then so very much easier. Members receive a 'handbook' on joining, which details much more about progressing further with the group - although not everyone goes to the lengths described within it!

Bumblebee *Bombus hortorum* on Woolly Thistle (photo by Martin Harvey)

The data collected is collated and maintained on the Society's own server, using its own software. Once received by the processing team, data is run through a set of checking routines to pick up errors in the format and is 'eyed over' to check for records which require further verification. Obviously the level at which this is applied depends upon the known proficiency of the person submitting the data. Records which are 'outliers' from the known distribution, either in terms of geography or

timing, are especially significant and need to be checked. Many of these will often have been noted in the Society's Newsletter before formal submission of the data, so things are straightforward. With others, however, the recorder has not recognised the significance of their submission; few things spur you on more than achieving a 'first'.

Improving the level of 'automatic' verification/validation so as to identify data which is in need of manual checking is a high priority for the development of the Society's database. Inevitably a lot of data which falls well inside known parameters will be passed with little inspection; a voluntary Society has not got the man-power to carry out full checks on every record. This is becoming a matter of ever-greater urgency, with the large amount of data being generated through sites such as iRecord and iSpot.

*Lasioglossum cupromicans*, one of the smaller solitary bees, for which identification may not be straightforward. (photo by Martin Harvey)

Data which is subsequently (perhaps many years later) shown to be erroneous is flagged as such on the main database and a correction 'child' record created (if possible), or the record is left as 'suspended'. The old 'parent' data is also kept, but flagged as not-exportable. All new data coming into the system is checked against the total data for duplicates, which are removed at that point. This is done for suspended, non-exportable and corrected records as well as for accepted ones. Record checking, once data is within the database, is carried out by a small team who have direct access to the server for this purpose. A full trail of any changes is kept.

In the first instance data is passed to the NBN Gateway once or twice in a year, depending on the volunteer time available. This dataset is displayed as a series of 10km resolution maps on the NBN which are echoed on the BWARS website. If anyone wishes to query a displayed record they should contact the data team at BWARS who will investigate further. Such 'post display' queries are a very useful form of validation and are encouraged. Clearly a 'corrected record' will not be updated displayed on the NBN/ BWARS maps until the next data update, but it will have a full audit-trail on the master BWARS database.

As might be expected with the current interest in bees there have been many occasions where researchers have asked for, and been granted, access to the data and quite a few well recognised papers have been generated on the basis of it. Local and national government bodies also have asked for access, especially Local Record Centres, these being the route through which any developer - or people contesting development - need to go for access if the data displayed on the NBN is not adequate for their purposes. BWARS does not have any salaried staff and cannot, nor does it wish to, undertake the compilation of specific area lists, or any interpretation of such lists.

## The Buzz Club – monitoring populations of UK pollinators and engaging volunteers in fun science projects

*by Dr Rob Fowler, Buzz Club coordinator*

The Buzz Club – in association with the University of Sussex – is an exciting new initiative using the collective power of citizen-science. Through volunteer participation, we undertake fun nationwide surveys and experiments, designed to help us learn more about why some pollinator species are disappearing, and what we can do best to help them. Anyone is welcome to take part, whether at home or at school we want people to get to know the wildlife right on their doorstep by becoming citizen-scientists. No expertise is required, but it helps if you're keen and willing to spend a small amount of time undertaking our project(s). We already have several projects up and running:

- The "Pollinator Abundance Network" (PAN) uses pan traps to measure the presence and abundance of different groups of pollinators. Coloured, water-filled traps provide a standardised catch of the smaller pollinators, particularly flies, beetles, wasps and some solitary bees, which are overlooked by most surveys. Volunteers are encouraged to try and identify what insects they catch, then samples are sent back to the University of Sussex for expert identification, allowing us to measure how abundant the different groups and species are across the country.
- Our "Bees 'n Beans" project tests whether we have sufficient pollinators in urban areas to adequately pollinate garden plants. While insect contribution to crop pollination is being investigated in farmland, the role these same creatures play in our urban environments shouldn't be overlooked. Peas, beans, courgettes, tomatoes, apples, strawberries and many other garden favourites rely on insect pollination to some extent, so declines in pollinators could threaten the viability of home-grown food. Volunteers measure whether sufficient pollinators visit broad beans and rat-tailed radishes, comparing yield with plants that are pollinated by hand. The number and weight of the pods and beans / radish seeds are collected by our volunteers, enabling us to compare how yields vary across the country and in different landscapes.

- For our newest project, "Hoverfly Lagoons", volunteers are helping us to discover whether we can effectively create breeding habitat for certain types of hoverfly in gardens. We are setting up small aquatic ecosystems filled with organic matter of different types. Early results suggest that these are quickly colonised by hoverflies.

Once collected, data are verified and analysed by researchers at the University of Sussex who aim to publish these findings in scientific journals. We intend to make the verified distribution data available via NBN.

For most projects we provide all the equipment required, but we ask those who take part to join as members of the Buzz Club to help fund our work at £2 per month (all of which goes towards the cost of the equipment). Members can choose which experiments to take part in. We send everything needed to participate, and will keep members updated on our findings and other research at the University of Sussex. For more information, please visit www.thebuzzclub.uk or follow us on Twitter: @The_Buzz_Club

## Great British Bee Count

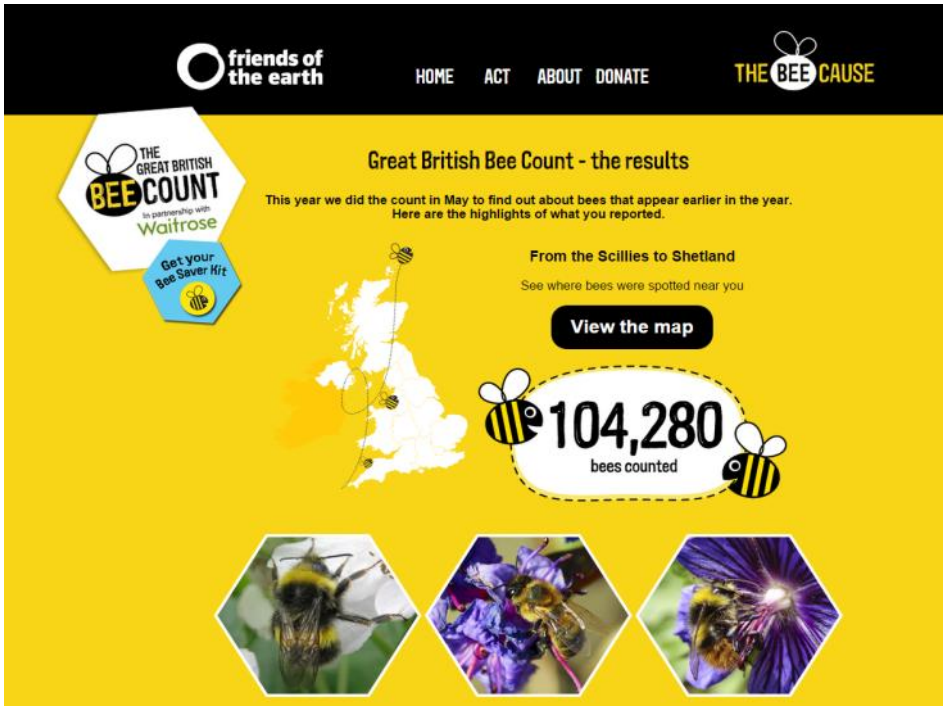
*by Sarah Gabriel, Friends of the Earth*

The Great British Bee Count is an annual nationwide survey that helps to monitor the UK bee population. Its main aim is to use fun tools to get as many people as possible learning about bees. This way we can start building a nationwide network of people looking out for our under-threat pollinators and monitoring how they are doing.

Next year participants will again have the opportunity to participate in the survey and record their results either via our smart phone app or website. There are two main activities that participants will be asked to do. One is to record which types of bees they see. The other is to do a basic two minute timed count to checked abundance levels in different areas. All this data is collected and results are published a few months later outlining what participants have recorded – things from the most frequently seen bees to which habitats are performing the best for bees (and which could do better).

In 2015, participants were also encouraged to take a photo of the bees they recorded. This was so that records could be verified. It is hoped that in 2016 the Great British Bee Count can partner with the Open University's iSpot project so that its rich community can assist with the verification of records. Friends of the Earth is also in talks with the NBN to make the data available through its Gateway service.

Citizen-science has the potential to teach many people about our natural world in a fun and accessible way. We hope that the Great British Bee Count brings this to life and encourages people to take a stand for our precious garden friends. To see the results from 2015 go to [www.foe.co.uk/page/great-british-bee-count-2015-results](www.foe.co.uk/page/great-british-bee-count-2015-results)



**Polli:Nation**

*by Ruth Staples-Rolfe, Polli:Nation Project Officer*

Polli:Nation is a programme which supports schools in helping to protect the future of our seriously dwindling bee population. The Polli:Nation project, developed by the school grounds charity, Learning through Landscapes, is supported by the Heritage Lottery Fund, and will engage 260 schools to help transform their grounds into pollinator-friendly habitats. The initial deadline for schools to apply is 21 September 2015.

Data recording will monitor any changes in species diversity and numbers. A key driver is to increase awareness of nature and particularly insects. A network of young enthusiasts in the 260 schools will help by spreading knowledge and creating green 'stepping stones' such as bug hotels and bee houses to enable insects to move with ease between different areas.

All schools in the UK will be able to apply to participate in the programme, which will be delivered by Learning through Landscapes and will enable teachers, children and volunteers to be trained to make the necessary changes to their school grounds to create habitats. They will be supported by biodiversity and landscape experts from the charity to develop their environments by planting insect pollinator friendly areas using pollinator friendly plants, building bug hotels and bee houses, planting night-blooming flowers to draw in moths, constructing bee-hives, as well as promoting changes to maintenance schedules, reducing pesticides and letting areas of the school grounds become wild.

The programme will also promote and encourage the development of existing provisions in schools such as orchards and wild meadow areas, green walls and ivy growth to attract the bees and other insects.

Learning through Landscapes will be delivering the Polli:Nation project along with other sector partners including The Field Studies Council, Buglife, Butterfly Conservation and the OPAL Network. For more information see http://www.ltl.org.uk/pollination/index.php

POLLI:NATION

## BeeWalks

*by Richard Comont, Data Monitoring Officer,*
*Bumblebee Conservation Trust*

The Bumblebee Conservation Trust was established in 2006 to help save Britain's bumblebees. A first step to conserving is to know which species are where, and how populations are doing, which is why the BeeWalk project was born. Based largely on the Pollard walks methodology of the Butterfly Monitoring Scheme (BMS), BeeWalk involves volunteers walking monthly transects to identify and count the bumblebees that they see and record the flowers being visited, with the ultimate aim of being able to establish bumblebee species population trends across Britain.

Time-wise, taking part in the survey generally works out at a couple of hours a month (travel, surveying, and data input at www.beewalk.org.uk), and covers eight months of the year (March-October, the bumblebee flight period). We usually suggest a route of about a mile (it can take a long while to walk a mile when there's good numbers of bumblebees about!), and it's always best to take a net and pot with you to check any trickier individuals. Of course, not all can be easily identified in the field and any you're not sure of should be recorded as 'indeterminate bee' – that way we get an idea of the total number of *Bombus* on the transect without being spuriously 'accurate' where the true species isn't clear. Anyone can take part - we're particularly keen that experienced bumblebee-identifiers become BeeWalkers, but we're working to provide training where it's requested.

Richard Comont demonstrating bee identification during a training day for the BeeWalks project (photo by Martin Harvey)

Data collected are verified by checking against range boundaries, habitat, phenology, recorder ability, etc, and are shared annually with the national recording body BWARS (the Bees, Wasps & Ants Recording Society) and will be included in their uploads to the NBN. We also have data-sharing agreements with several LRCs and county Hymenoptera recorders, and are happy to set up more on request (to beewalk@bumblebeeconservation.org).

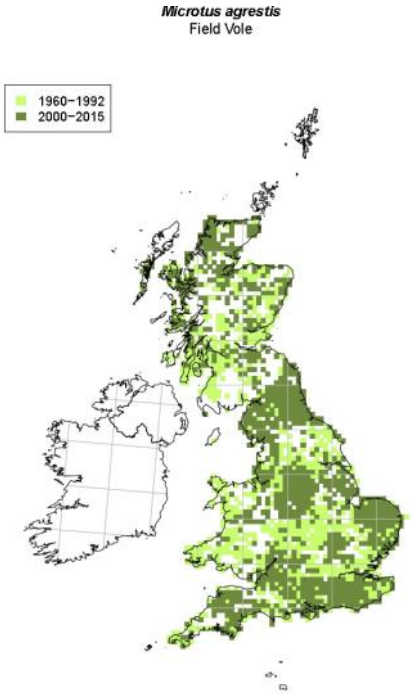
Because of the particular way bumblebees forage, site-specific indices of abundance (as are produced for the BMS) are unreliable: consequently trends will be analysed across regions and nationally, though we still need a couple of years' extra data to be able to distinguish signals from the noise. In the meantime we're using the data to help BWARS map the northwards spread of the Tree bumblebee *Bombus hypnorum*, and using occurrence and flower visitation data to guide our conservation work. We're also always open to research collaborations!

# A new national mammal atlas

*by Derek Crawley, The Mammal Society*

In order for conservation agencies to make informed decisions it is important that they have up-to-date information on species distributions, population size and trends. It is becoming more important to not only record species information but have the ability to share it. It is the latter that can cause the biggest problem to any involved in national recording schemes.

The Mammal Society mission statement "More for Mammals" included an aim to update the national atlas, last published in 1979, to ensure that red list assessments and the common cause for nature strategies are based on current known distribution.




For the last five years we having been working with record holders to share data and get our members and the public to send in records of mammals from across the UK. We intend to publish the atlas in the autumn of 2016 with the last records being accepted on the 31 December 2015. So if you have any records you would like us to use and you have not been contacted by us please get in touch: Atlas@themammalsociety.org

We have been working closely with the Biological Records Centre in collating the records so they can produce the distribution maps and analyse the data. They have been excellent in advising us in the process and how to gain data agreements, and in setting up verification for IRecord where all our records are being stored

Most of the work is being done by volunteer effort although we did have a Lottery grant for a south-east England project where we produced the SE Atlas (see http://www.mammal.org.uk/mawse) and developed the "mammal tracker" app, which made recording species much easier for the public and existing mammal recorders. These records along with those added via the Mammal Society Recording web page all get submitted to IRecord. We have established a set of mammal recorders to verify each county's records, allowing them access to their own county records. Other people can see the records via the NBN data sharing agreements.

We now have provisional maps to allow our expert authors to write about each species. One interesting aspect has been that the new maps are not showing the same distribution as the previous atlas for what we considered the more common species. The question is whether this is a true reflection of change or is more to do with differences in recording coverage, and this is one of the questions our analysis will try to answer.

# NFBR and recording schemes

*by Sarah Whild, with input from Paula Lightfoot and Martin Harvey*

NFBR aims to represent the full range of biological recording activity, as far as it can. This of course includes, among many others, the national recording schemes that do so much to document species in many different groups across the country. We would like to ensure that NFBR is playing a useful role in representing the views of recording schemes, but in order to do this we need to develop the most appropriate ways of communicating with the schemes and the people who run them.

To this end, last April we asked attendees at the Recorders' Meeting of the Botanical Society of Britain and Ireland to complete a questionnaire about how they saw NFBR in relation to their recording activity. Thanks to responses from 53 people, we have some interesting results:

- Just over half had heard of NFBR before they received the questionnaire, but only a very small proportion were currently members.
- Over two-thirds sent their records to a local environmental records centre as well as to their recording scheme.
- About half knew that their records were available on the NBN Gateway; just under half were unaware of whether their records were on the Gateway or not.
- We asked people to say how keen they were for their records to be used for: conservation, research, planning, and informing/inspiring others. Most people responded that they were "very keen" that their records should be used for all four categories; conservation and research scored highest, but only by a small margin. No-one responded that they didn't want their data used for any of these four purposes.
- When asked "Do you think that it would be good for recording schemes and societies to have a way of feeding in a collective response to government consultations and other major projects?", a large majority responded "yes".
- When asked "Do you think that NFBR could represent the collective views of recording schemes and societies?" only two-thirds of the group responded, but the great majority of those who did respond thought that NFBR could act in such a representative way. Other views were that recording schemes could be better represented by other organisations (suggestions were RSPB, Wildlife Trusts, BRC, BSBI, Local natural history societies), or that recording schemes could organise a collective response among themselves.
- A range of suggestions were put forward as to how NFBR could communicate better with recording schemes, all of which received large majorities in favour: enthuse more schemes and society members to join NFBR; ensure that schemes are represented on NFBR council; set up email groups/mailing lists to consult schemes; send out questionnaires on particular topics.
- A note of caution: when asked if it was realistic to seek consensus from the variety of different recording schemes 15 answered yes and 13 said no.

Finally, we asked people to highlight what they saw as the top issues or concerns relating to biological recording that NFBR ought to address. In no particular order, the issues raised included:

- Ensuring records are valued and validated/verified
- Funding for schemes and societies, with funding getting to grass-roots recorders
- Over-interpretation of data collected

- Uneven playing field for funding
- More consensus on what to record
- Should full datasets be made available to everyone free of charge?
- Sidelining of proper biological records from decision making
- Data flow and integration of records
- Consistency of data on NBN
- Reduction in funding to LRCs
- Less than desirable joined-up thinking between recording schemes results in fragmentation and less representation particularly at government level.

NFBR is grateful to the BSBI members who took the time to respond, and we will be reviewing the results to help develop our liaison with other recording schemes. We'd be delighted to hear from anyone involved in running a recording scheme who would like to help NFBR take this approach forward.

## Review: Pentax Papilio binoculars

*bu Steve Whitbread*


Smartphones, ever more capable cameras, GPS, and all that Internet interconnectedness have all done wonders for biological recording, even for the less gadget prone. However, I thought I'd share some entirely non-technical views on a piece of kit that really ought to be high on the Christmas list of any naturalist (blame the Editor, who was sporting his during the conference field trip) and for which no batteries need be included.

The Papilio II binoculars from Pentax (in 8.5x and 6.5x magnification options) focus to 50cm (to the wrist of my outstretched arm. They are small, light, fit comfortably even into small hands (and larger pockets) and also have a tripod mount. In the months I've owned mine they've given me more instant pleasure from casual natural history wanders than anything else.

If you actually want to see small wild things well enough to identify them and better yet watch their behaviour without disturbance – a caterpillar munching a leaf; ladybirds causing consternation amongst ant aphid farmers; the joy of spider sex etc. – and to see things you've never seen before these are the bee's knees (yes, they're good for that too). And they're great for getting up close and personal with plant structures or (at least with the 6.5s) peering at bullfinches in bushes from rather further away too.

There are links to a couple of proper reviews below (though neither refrain from use of 'Wow') but these are absolutely my Desert Island Disc luxury item. It would be even better if they were waterproof (for when I eventually drop them in a tropical rock pool) but otherwise they are absolutely great. They'll cost rather more than a decent hand lens but can be found for much less than their £150/£200 list prices. If you want to give a gift that keeps on giving (to you) then these are highly recommended. But don't take my word for it, see the additional reviews here:
http://www.bestbinocularsreviews.com/Pentax-Papilio-85x21-Binoculars-118.htm
http://www.birdwatching.com/optics/pentax_papilio.html

# News updates


National Biodiversity Network

Following the publication of the NBN strategy earlier this year a number of new developments are moving ahead - these are exciting times for the NBN Trust and the wider partnership!

- Crowdsourcing Data Capture Summit: this meeting will be held in Manchester on 25 September, aimed at kick-starting collaborations to mobilise undigitised data holdings using crowdsourcing platforms. Details and booking at www.nbn.org.uk/News/Latest-news/The-NBN-Crowdsourcing-Data-Capture-Summit
- The annual NBN Conference is on 19-20 November, over two days and in York rather than London. As usual there is an excellent range of speakers lined up. Early-bird booking is available until 9 October, go to www.nbn.org.uk/News/Latest-news/2015-NBN-Conference-bookings-are-open!
- The new Atlas of Living Scotland is now live at www.als.scot. This is not only a major project for biological data-sharing in Scotland, it is also being used to test ideas for the development of a wider atlas-type web portal for the NBN as a whole. There are a number of ways in which you can take part in testing and commenting on the new site: www.nbn.org.uk/News/Latest-news/Atlas-of-Living-Scotland-Update-(1)
- Awards for biological recording: the NBN Secretariat has established a new national award scheme in partnership with the Biological Records Centre and NFBR. These awards will be made annually to individuals, groups of people or organisations that are making outstanding contributions to biological recording and improving our understanding of the natural world. Nominations for the four categories can be sent in until 30 September and the awards will be presented at the NBN Conference: www.nbn.org.uk/News/Latest-news/UK-Awards-to-celebrate-biological-recording-and-in
- NBN is establishing a UK biological recording scheme database, to make it easy to find out about and contact recording schemes and survey projects throughout the UK. To make sure your project is on the list go to www.nbn.org.uk/News/Latest-news/UK-biological-recording-scheme-database-establishe
- PhD student Ben Brown is working with NBN to research the motivations of biological recorders. To find out more and take part see www.nbn.org.uk/News/Latest-news/NBN-recorder-motivation-internship
- And in case you missed it last May, there is a splendid article by Teresa Frost of Cumbria Biodiversity Data Centre on the value of local environmental records centres sharing data with wildlife recorders via NBN, at www.nbn.org.uk/News/Latest-news/The-Value-of-Local-Environmental-Records-Centre-da

## News snippets

- LiDAR data collected by the EA is now freely available under the Open Government License at 0.5m, 1m and 2m resolution and can be downloaded from environment.data.gov.uk/ds/survey#. Very useful for habitat mapping, species distribution modelling and all kinds of spatial ecology fun!
- Roger Morris, eminent entomologist and ecologist and one of the organisers for the Hoverfly Recording Scheme, has produced a number of thought-provoking posts on his blog recently, including “Is biological recording a modern phenomenon?”, “A rationale for caution in photographic identification” and “Is the biological recording community ageing?”. These can be seen at stamfordsyrpher.blogspot.co.uk

- Over a million photos of wildlife have been added to the iSpot website since its launch in 2009. And iRecord is now displaying over a million wildlife records (with another million being managed via the data warehouse that sits behind the iRecord website). That's a lot of enthusiasm for biological recording!
- Species identification day courses via Manchester Metropolitan University, held at The Gateway centre in Shrewsbury – several still to come this year: www.sste.mmu.ac.uk/recording
- Know your plants: BSBI's Training and Education Committee have produced a simple booklet with details of how to start learning plant identification. The PDF is available to download from www.bsbi.org.uk/training.html, or if you would like hard copies to hand out to students/learners, email Sarah Whild: S.Whild@mmu.ac.uk


## "Introduction to biological recording" courses

Interested in becoming more involved in biological recording, but not sure where to start? The FSC's Tomorrow's Biodiversity Project is running several new 'Introduction to Biological Recording' courses at FSC Preston Montford in Shropshire over the next year. The first, to be held over the weekend of 5th and 6th December 2015, is already fully booked, but another will run early in 2016 – dates will be announced. The aim is to help attendees navigate the sometimes confusing world of UK biological recording, and emerge ready to start contributing valuable biological records.

Topics include:

- Making biological records;
- Understanding recording organisations and the recording community;
- Choosing and using identification resources;
- Submitting biological records;
- Options for accredited training in biological recording.

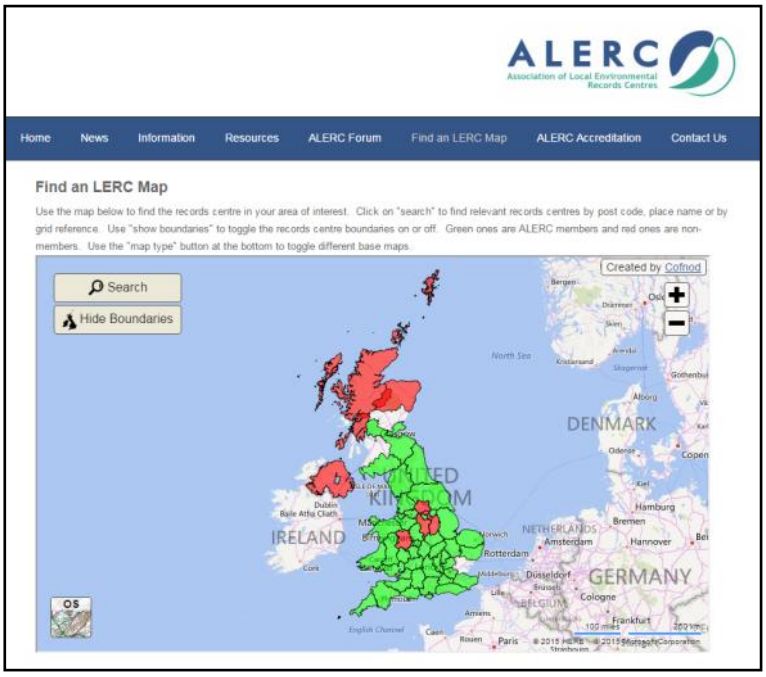
The second day features a mini Bioblitz, taking attendees through the entire process of making biological records, from sampling and identifying specimens to submitting records. The weekend also includes an introduction to the accredited training programmes on biological recording run by Manchester Metropolitan University in conjunction with the FSC, and a Q&A session with those actively involved in biological recording.

The course is excellent value for money, and is subsidised by the FSC Tomorrow's Biodiversity Project. Students may also be eligible for a separate travel bursary of up to £40.

The course will be lead by the Tomorrow's Biodiversity team: Charlie Bell and Rich Burkmar. For information on upcoming Biological recording course dates, and the full range of other Tomorrow's Biodiversity training courses, please see: www.tombio.uk/courses

# News from ALERC

*compiled by Tom Hunt*




ALERC has been busy since its last conference, consolidating the organisation's fundamentals and looking to secure its future. Through consultation with its members, ALERC has decided to formally refer to records centres as Local Environmental Records Centres (LERCs) rather than just Local Records Centres (LRCs). Although this appears a minor change, it is more descriptive, which is especially important for people new to LERCs. It also makes the association consistent with its members, i.e. ALERC and LERCs.

As part of this defining process, members were also consulted on a new official definition for LERCs. This was agreed as "Local Environmental Records Centres (LERCs) are not-for-profit organisations that collect, collate and manage information on the natural environment for a defined geographic area. LERCs support and collaborate with a network of experts to ensure information is robust, and make information products and services accessible to a range of audiences including decision-makers, the public, and researchers."

Further to defining LERCs themselves, ALERC has been documenting plans for its future direction in a new five year strategic plan. This document will not be published later in the year, but aims address the four key areas of resources, members, audience and development. A key element will be continued support for the National Coordinator by raising a greater amount of money from the membership. It is hoped that showing a greater level of commitment to the post by the members will make investment in the post by funding bodies and partners more attractive. One thing that has come in for this year, is the requirement for all ALERC member LERCs to set some kind of time scale for their accreditation. Different LERCs are at different stages regarding their progress towards accreditation, but it is felt that all of them should be able to accredit within five years. The overall effect of this will be to raise confidence in the LERC movement as a whole. More information on ALERC accreditation can be found at http://www.alerc.org.uk/accreditation.html.

Finally, if you haven't already, checkout the (relatively) new map on the ALERC website. Here, you can now search for a relevant LERC using a post code, grid reference or other location name. The map can be found at http://www.alerc.org.uk/find-an-lerc-map.html.

## News from LERCs

### *Bristol Region – BRERC*

As many of you will know, Bristol is European Green Capital for 2015. As part of this initiative, Bristol Regional Environmental Records Centre is organising one of the more unusual wildlife surveys. How Green is My Alley invites people to survey local alleys. According to BRERC, "alleys provide a habitat for a surprising variety of wildlife, often in

areas where wildlife habitats are rare. Interesting plants can be found including species from southern Europe which flourish in the warm sheltered environments which many alleys provide. The plants, in turn, provide food and shelter for birds and insects. Their flowers provide pollen and nectar for butterflies, bees and hoverflies. Ferns, mosses, lichens, snails and spiders can also be found on the walls of a typical alley."
An information pack together with various recording forms can be downloaded from the BRERC website www.brerc.org.uk. Alternatively, contact BRERC and they will send you a survey pack. All the data gathered will then be incorporated into BRERC databases.



### *Thames Valley – TVERC*

People in the Thames Valley region will be interested to learn that Thames Valley Environmental Records Centre have successfully completed several Natural England supported training courses this summer that have provided attendees with an introduction to ecology and survey techniques. There will be more courses next year, although if this year is anything to go by, they will be booked up very quickly. Look out for more information on www.tverc.org.uk or follow them on Twitter: @TVERC1

There is more information on this story, and many more, in the latest edition of the TVERC newsletter which can be found here http://www.tverc.org/cms/sites/tverc/files/Newsletter%20Summer%202015%20Final%20High%20Resolution_0.pdf.

**BRISC 2015 ANNUAL CONFERENCE - CAIRNGORMS NATIONAL PARK**
Saturday 31 October – Sunday 1 November

**'Mind the Data Gaps - Are Regional Data Hubs the Way Forward?'**

Taking place at The Grant Arms Hotel, Grantown on Spey

Provisional programme, Saturday:

- Out in the field in the morning for those who arrive earlier
- 1200 hrs Soup and Sandwich lunch
- 1300 hrs AGM
- 1330 hrs Conference
- Dinner

Sunday

- Breakfast for those who stayed overnight
- Day out in the field (packed lunch or local eatery before leaving without return to the hotel)

Costs
Residential Conference Delegates: £80.50 pp. Includes all meals, refreshments and accommodation for Sat & Sunday (packed lunch extra). No single supplement.

Day Delegate: £15.00 pp. Includes Soup & Sandwich Lunch, refreshments and Conference. Three course evening dinner is an extra £25.

## Recording and research

*Biological recording contributes to wider research outcomes, and ultimately to better understanding of ecology and conservation. Here are some recent research papers that draw on data from recording schemes, or are relevant to biological recording in general.*


- Biological Journal of the Linnean Society – Special Issue: **Fifty years of the Biological Records Centre**. Volume 115, Issue 3, Pages 469–784: onlinelibrary.wiley.com/doi/10.1111/bij.2015.115.issue-3/issuetoc

This anniversary celebration issue includes a wide range of papers that will be of interest to anyone involved in biological recording. There isn't space to list all the contents, but here's a flavour of what is covered:

- Taking the oldest insect recording scheme into the 21st Century (by Garth Foster)
- Ecological monitoring with citizen science: the design and implementation of schemes for recording plants in Britain and Ireland (Oli Pescott *et al.*)
- Bias and information in biological records (Nick Isaac and Michael Pocock)
- Beyond maps: a review of the applications of biological records (Gary Powney and Nick Isaac)
- Gains and losses: extinctions and colonisations in Britain since 1900 (Mark Gurney)
- Recent trends in UK insects that inhabit early successional stages of ecosystems (Jeremy Thomas *et al.*)
- An agenda for the future of biological recording for ecological monitoring and citizen science (Bill Sutherland *et al.*)

Plus new technologies, environmental DNA monitoring and much more besides! All the papers are currently available as open-access downloads via the above weblink, although I believe that the open-access option is time-limited, so get your copies now!

- **Big science from small insects**: medium.com/@BBSRC/big-science-from-small-insects-d3d05a69c94c

A Rothamsted moth trap in action (Martin Harvey)

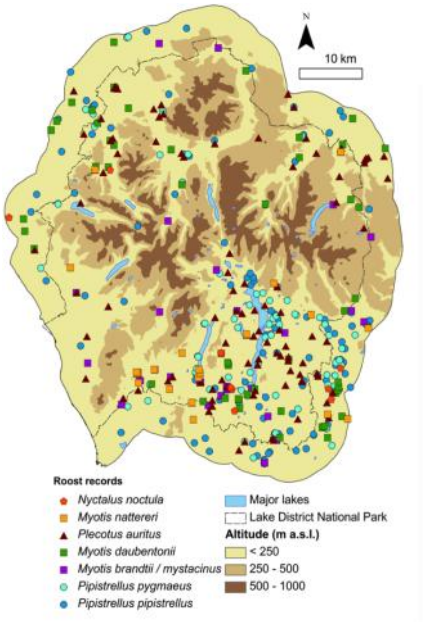
Not a research paper, but a good summary of some of the many research areas that have benefited from the long-term monitoring of insects over 50 years via the Rothamsted Insect Survey. This has produced huge advances in knowledge for agriculture, conservation and ecological research in general. "The Rothamsted Insect Survey has amassed an incredible wealth of data and is now widely regarded as the most comprehensive and continual database in the world on terrestrial invertebrates" (Dr Richard Harrington, former RIS Project Leader).

- Bellamy, C., and Altringham, J. 2015. **Predicting Species Distributions Using Record Centre Data: Multi-Scale Modelling of Habitat Suitability for Bat Roosts**. *PLoS ONE* 10(6): e0128440. doi:10.1371/journal.pone.0128440

Conservation increasingly operates at the landscape scale. For this to be effective, we need landscape scale information on species distributions and the environmental factors

that underpin them. Species records are becoming increasingly available via data centres and online portals, but they are often patchy and biased. We demonstrate how such data can yield useful habitat suitability models, using bat roost records as an example.

Georeferenced bat roost records from across Cumbria were supplied by the Cumbria Biodiversity Data Centre: 3,891 records made between 1980 and 2009 were provided, including roost observations of eight species. The records were provided by naturalists, local bat groups and other organisations, and a small number of records were added from incidental fieldwork by the authors.



Map of the species' roost records used from the Lake District National Park.

Multi-scale models, combining variables measured at their best performing spatial scales, were used to predict roosting habitat suitability, yielding models with useful predictive abilities. Small areas of deciduous woodland consistently increased roosting habitat suitability, but other habitat associations varied between species and scales. Pipistrellus were positively related to built environments at small scales, and depended on large-scale woodland availability. The other, more specialist, species were highly sensitive to human-altered landscapes, avoiding even small rural towns. The strength of many relationships at large scales suggests that bats are sensitive to habitat modifications far from the roost itself.

## Identification Trainers for the Future – 6 months on

*by Steph West, Project Manager, Identification Trainers for the Future*

You might remember a few months ago we were advertising for trainees for our Identification Trainers for the Future project. Well our first 5 trainees have now been with us for 6 months so we thought it would be a good time to update you on their progress.

The Identification Trainers for the Future project is being run by the Natural History Museum in partnership with the Field Studies Council and National Biodiversity Network Trust and is funded by the Heritage Lottery Funds Skills for the Future programme. It is looking at ways of bridging the skills gap in UK biological recording where we are seeing a loss of taxonomic skills, particularly in early career ecologists and for those species groups often considered 'difficult'. As part of the project, over 3 years we will be taking in 15 trainees on 12-month long work-based placements where they will develop their identification skills for a range of critical taxa as well as learning communication and teaching skills so they can pass their knowledge on to others.

Our first 5 trainees started in March this year. In the last 6 months Anthony Roach, Chloe Rose, Katy Potts, Mike Waller & Sally Hyslop have undertaken a

wide range of identification training courses, helped us with our citizen science projects such as Orchid Observers and Microverse, delivered training as part of our Decoding Nature project, run stands at events including Big Nature Day and the Tring BioBlitz, as well as building their own collections and working on their own specialist areas. They have also completed placements at FSC centres across the country and had training in biological recording direct from the NBN, and in using iSpot and iRecord from the NFBR's Martin Harvey.

The identification training has of course been a real highlight, with a wide range of species groups covered at this stage, including coleoptera, diptera, hymenoptera, flowering plants, bryophytes and lichens. We have also been able to offer additional places on some of these workshops, with individuals from a variety of organisations attending, and hope to make more places available next year. In order to re-enforce all this training, we have not just been sat in the Angela Marmont Centre looking at specimens from the NHMs collections, but heading out into the field to learn field ID, collection and preservation techniques. Some of this was done during the workshops themselves, but we also ran a 3 day study tour down to the Dorset coast to focus on various elements of field work.

As you can see, the trainees have certainly been busy over the last 6 months. As I type this though the trainees are now starting their first day of Phase three of their traineeship, where they spend 3 months working solidly with a single curation team developing their specialist interest. Katy will be joining the Coleoptera section, Mike will be working on Lichens, Sally will be staying with us in the AMC to work on the UK herbarium, Anthony will be recurating the British Odonata collection and Chloe will be working with Hymenoptera. They certainly have an intensive few months ahead of them, and a fantastic opportunity to develop their skills and work with some of the top specialists in the country.

This gives me time therefore to work on recruiting our next trainees! Yes, we are already looking for our next group of enthusiastic early career ecologists, taxonomists and scientific communicators to join us from March 2016.

Applications for the next round of Identification Trainers traineeships at the Natural History Museum are open from **14 September to 12 October 2015.** It may be possible to book a place on a taster session to find out more about the traineeships. For more information on the taster sessions or to download application forms see the webpage at **www.nhm.ac.uk/idtrainers**.

More detail on how the traineeship programme over the last year can be found on the blog at blog.nhm.ac.uk/tag/id-trainers-for-the-future-blog