

**NATIONAL FEDERATION  
FOR  
BIOLOGICAL RECORDING**

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***NEWSLETTER 43***

**January 2012**



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### **Note from the Editor**

When I put out a call for articles for the newsletter, I never quite know what will come in, but this time we have an interesting mix of articles on new technology and initiatives alongside an article on the importance of long-term experiments and reviews of published works which incorporate years of research. And that seems to be the challenge for many of us, valuing the history of biological recording whilst embracing new ways of working.

This is my final newsletter - thank you to everyone who has contributed over the past five years. If anyone out there would be interested in taking the role of editor please talk to someone on the Council or you are welcome to contact me directly.

**Carolyn Steele**

Cover photograph: Scarlet Elf Cup *Sarcoscypha austriaca* ©Bryan Edwards



## News from the NFBR Council

Your Council has had a busy summer responding to a variety of consultation processes. Here is a brief summary of this activity. If you would like further details of any of this, please contact one of the Council.

- Trevor represented NFBR at an IEEM meeting concerning data use in the NBN. In relation to this meeting, at which several Council members were present, Paula Lightfoot of NBN Trust is due to be drawing up guidelines for consultants using NBN data.
- Trevor represented NFBR at a government “All Party Parliamentary Group on Biodiversity” meeting. There is more background on this process on the iPoak site and on the British Ecological Society blog:  
<http://www.ipoak.org/the-new-appg-on-biodiversity/>  
<http://britishecologicalsociety.org/blog/blog/tag/all-party-parliamentary-biodiversity-group/>
- Steve submitted comments on NFBR’s behalf to the Environment, Food and Rural Affairs Committee’s inquiry into the Natural Environment White Paper.
- Trevor with input from other Council members produced an NFBR response to Defra’s consultation on “Biodiversity 2020: Developing indicators for measuring success”.
- Steve, Graham and Martin compiled an NFBR response to the consultation on the Draft National Planning Policy Framework; the response can be seen on the NFBR website: [http://www.nfbr.org.uk/wiki/images/5/5a/NPPF\\_NFBR\\_Response.pdf](http://www.nfbr.org.uk/wiki/images/5/5a/NPPF_NFBR_Response.pdf)
- Further work was carried out on the NFBR Strategy (“Joining the dots”) by Steve, Trevor and other Council members.

Council members: Trevor James, Martin Hicks, Graham Walley, Steve Whitbread



### NFBR Discussion Forum

NFBR has set up a discussion forum, open to all. We’ll be using this to highlight the activities of NFBR itself of course, but questions and debate about anything to do with biological recording are welcome. We’re using a Google group for the forum; to read and take part use the link at the foot of the NRBR home page, or type this into your browser: [bit.ly/nfbr-group](http://bit.ly/nfbr-group)

## Instant Indicia

### John van Breda, Biodiverse IT

Not long before Indicia was conceived I'd spent some time looking at several content management systems, tools for creating websites. Although aimed at building online recording solutions rather than generic websites, Indicia is similar in many respects; rather than attempting to provide a finished solution the aim is to empower you to build a solution that meets your needs. I'd been impressed by several of the content management systems having an introductory video tutorial showing how you could start from scratch and end up with a blog or other website in just a matter of twenty minutes or so. This was impressive given the flexibility and power of the tools in question, especially when you compare this with the time it takes to develop a website or other piece of software from scratch. In some ways this goal became my own personal measure of Indicia's success. Could we provide a video tutorial on the website which shows you how to create an online recording website in twenty minutes or less?

Of course my idea of a twenty minute tutorial cannot be the only metric of success. Each new survey built with Indicia helps to validate the product, but also Indicia benefits from its customers far more than most other products because of the open source nature of the project. Every feature developed for surveys using Indicia is contributed back to the Indicia code and therefore the entire community can benefit from the enhancements. The more Indicia gets used and developed the better it becomes.

For some time now, Indicia has provided a set of tools that significantly reduce the time required to build complex online recording solutions. Features like input forms that automatically display the attributes you are gathering for your survey, fully spatially enabled data that can be directly connected to Google Earth, built in verification and data download workflow and ability to upload data from spreadsheets are all available with relatively little effort. Indicia is also a completely free and open platform; the source code is available to all and can be modified as you require without any dependencies on a single software house or proprietary software. Despite all of these positive points, although simpler to work with than coding your own solution, until recently Indicia was still a big and complex system with a learning curve associated with it and therefore some way from my dream of a twenty minute tutorial. To any newcomer to the project, the time from first finding the Indicia project page to getting something working was still far too long.

It's worth taking a moment or two to explain where Indicia had got to around the time we started work on Instant Indicia earlier in 2011. Indicia provided a powerful and flexible data warehousing platform for biological records, plus a set of programmers tools for building custom websites with relatively few lines of code. We could also integrate Indicia with the Drupal content management system to easily create web pages from a number of ready-made templates, including data entry, verification, reporting, mapping and charting, all without touching the underlying code. However, to get started with your own Indicia website, there were still some initial hurdles, namely having to install Drupal on a web-server and to learn enough about Drupal to be able to set it up for online recording. Alternatively you would need to know enough about programming with PHP to be able to insert code that uses the Indicia coding library into your own web-pages. Neither of these were trivial tasks and both were big problems for my goal of the 20 minute video tutorial.

Instant Indicia itself is really just a customised installation of Drupal. When you install Instant Indicia you are in fact installing Drupal, but at the end of the installation (which has a fairly simple wizard to guide you through the process) you will end up with a site that is pre-configured for online recording. Out goes the requirement to learn PHP or more than the very basics of Drupal to get started. Once you've installed Instant Indicia you select which features you want your site to support. Data entry forms, verification, mapping and reporting

are all available from a categorised list of the available features as follows.

[more help...]

Indicia Data Management	Feature	Signature	State	Actions
<a href="#">Indicia Input Forms</a>	<input type="checkbox"/> <b>Browse Images</b> Creates a page for viewing images uploaded to the site.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
<a href="#">Indicia Miscellaneous Features</a>	<input type="checkbox"/> <b>Browse Records</b> Creates a page for viewing sightings data.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
<a href="#">Indicia Reports</a>	<input checked="" type="checkbox"/> <b>Mapping Portal</b> A page which lets you query records using a map.	Unavailable 6.x-1.0-alpha1	Default	Recreate
<a href="#">Testing</a>	<input type="checkbox"/> <b>My Images</b> Creates a page for viewing your own images.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate
	<input type="checkbox"/> <b>My Records</b> Creates a page for viewing your own sightings.	Unavailable 6.x-1.0-alpha1	Disabled	Recreate

Save settings

Figure 1 - choosing features for your site

Simply tick the features you want added to your site and press Save Settings. In some cases there is a little bit of configuration to do, but nothing more complex than selecting which species checklist to record against. The list of features available are not only limited to the ones which are directly related to the wildlife records held by Indicia; other features such as a discussion forum, species account pages and species gallery can all be added by ticking boxes. Furthermore, the data entry forms dynamically create input controls according to the list of attributes you configure for the survey, including applying custom validation rules you define. You can even create your own attributes completely from scratch. If you want the record form to include an input box for the temperature which accepts values from 15 degrees upwards when recording flying insects, just configure it in your survey and it appears on the form, with no need to request a developer to do this for you.

Figure 2 - adding a custom attribute

An approach so simple to get started with can only provide you with a default setup of each of the features. You might think that if you want to highly customise the pages you'd be better off starting by building your own web pages using the Indicia code library so you have full control over the output. Many times in the past I've found that tools which are easy to pick up and get started with are a bit limited in their flexibility, whereas more complex tools take longer to get started with but give better results in the long run. Instant Indicia is different in that it simplifies the initial setup of your online recording site massively, but does not hinder

your creativity or limit the possibilities in any way. You can still access all the configuration options for the forms and can even dive in to customise the underlying code and add entirely new functionality if you see fit.



Figure 3 - a running Instant Indicia site

So, where does this all leave us? Indicia is proving to be a capable platform for everything from citizen science and generic “record everything you see” surveys, to structured long term monitoring projects. At one end there the BBC Breathing Places Ladybird Survey and *Maach Mat*, recording several common species in Luxembourg (see [http://data.mnhn.lu/maach\\_mat/planzen](http://data.mnhn.lu/maach_mat/planzen)). There are also projects such as NatureSpot (<http://www.naturepot.org.uk>) in Leicestershire & Rutland and the Corfe Mullen BioBlitz (<http://biodiverseit.co.uk/naturewatch/bioblitz-live>) which allow recorders to input records and upload photos of anything they see. Then there are the successful Common Bird Monitoring and Butterfly Monitoring surveys in Luxembourg with 33000 records in the last year between them and the Spipoll pollinator survey in France (<http://www.spipoll.org>) with a further 50000 records. Each of these surveys uses forms designed specifically for the survey, whether it is a simple single page form or wizard for citizen science data or a complex data entry system for recording transect data according to a fixed methodology.

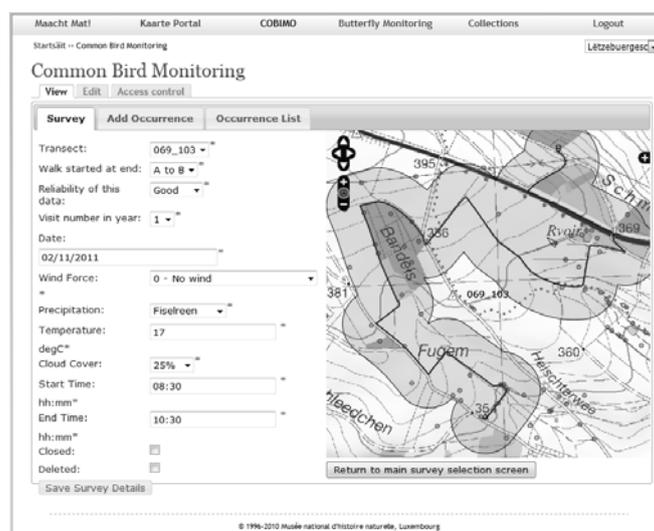


Figure 4 - bird monitoring transects in Luxembourg

It is early days for the “Instant” flavour of Indicia but already the signs are good. At the recent NBN workshops we took 17 non-programmers from scratch to building their own online recording site complete with data entry, image upload, a forum and maps in the space of 3 hours. It’s even faster than that once you are familiar with Indicia. I can now setup a website with a data entry form that allows photo upload of any species, a report to browse the uploaded records and images and perhaps a discussion forum in a matter of minutes. 6 minutes was my best time recently, though maybe that was going a bit too fast for a screencast! If you don’t believe me, you can find videos at <http://www.youtube.com/playlist?list=PL9966FA0CDADC5F87>.

Although I appreciate that just because the videos take 20 minutes to watch doesn’t mean that you will have learned all you need, the initial learning curve has come down massively with the launch of Instant Indicia. The comprehensive tutorials (found at <http://code.google.com/p/indicia/downloads/list>) can easily be followed in less than half a day, assuming you are using an existing Warehouse for the data storage, and at the end of the tutorials you’ll be fairly confident with using Indicia to build websites inside the Drupal content management system. With upcoming developments things can only get better, as we add new spatial reporting capabilities for the LRC Online project, verification facilities and integration with the NBN Data Cleaner rules and many other facilities both to the core framework and the Instant Indicia rapid setup tools.



## **OPAL iSpot Update**

**Martin Harvey, iSpot team, The Open University ([m.c.harvey@open.ac.uk](mailto:m.c.harvey@open.ac.uk))**

In NFBR newsletter 41 Bob Ford explained iSpot ([www.ispot.org.uk](http://www.ispot.org.uk)) as a website that puts novice wildlife watchers in touch with experienced naturalists, in order to help people learn how to identify wildlife. iSpot has been developed by the Open University, as part of the OPAL (Open Air Laboratories) project. Use of iSpot itself continues to increase, with over 83,000 observations now posted on the site. This update focuses on two areas of work: outreach activity and data downloads.

### **iSpot outreach**

One of the strengths of OPAL and iSpot has been the focus on taking natural history and environmental science to groups of people who may not previously have had the chance to participate in such activities. For iSpot, much of this work has been delivered by our team of Biodiversity Mentors, funded through OPAL in each of ten English regions, and by an Open University grant in Ireland, Wales and Scotland.

Our team of mentors has been involved in an enormous variety of events and projects, and it’s difficult to choose just a few highlights, but the following are just three examples of how we’ve been using iSpot and the other OPAL projects to widen participation in natural history:

- Survey workshops for students with learning difficulties at Kingston Maurward Agricultural College, Dorset (mentor: Bob Ford). The students took great delight in taking part in the OPAL biodiversity and water surveys, examining their catches and putting names to the various invertebrates caught. They went on to use iSpot for further help with identifications, and linked in to other biodiversity-related work as part of their college studies.
- Community science project for Centre West Team, Newcastle (mentor: Keith Bowey). Keith worked with the Community Science Development Team, which works with many

community groups across a particularly deprived area of Newcastle, to deliver programmes of work designed to engage local people with science. During the year the Centre West Project recruited, from the local community they serve, three qualified outreach officers, who had done no previous environmental work. By October 2010, the outreach team had all qualified to NVQ level 2 Science & Technology (with the use of iSpot contributing to this achievement). They have gone on to run local events and activities, using iSpot as one means of engaging local people with science, and linking to other OPAL projects in the region.

- Cornwall Neighbourhoods for Change, a charity aiming to improve the lives and environment for people in the most deprived areas of Cornwall (mentor: Trudy Russell). Working with environment workers for this charity, Trudy developed a range of biodiversity-related activities that were sent out to participants in a project helping families to grow their own food. Play days and other events were run, building on OPAL surveys and related activities and using iSpot for identifications, and as a place for people to go for information after the events had finished.

### **iSpot data downloads**

There is now a data download system in place on iSpot, which allows the export of iSpot observation data for particular taxonomic groups into a spreadsheet format. We are now starting to pass data on to those recording schemes that wish to receive it. iSpot is intended to help people learn how to identify wildlife rather than as an online recording system, but the process of adding observations to iSpot does generate the information needed for biological records, and we are keen to make these records available where relevant. Recording schemes receiving the iSpot data will have to make decisions about how much of it can be fully verified and imported into their main datasets, but we hope the spreadsheet export format will make this relatively easy to do, with hyperlinks back to the original observations in iSpot so that unusual records can be checked.

In the longer term we hope to provide access for bona fide recording schemes to download data themselves, but for now we can pass it on to you, please contact Martin Harvey for further details. We cannot yet filter data by geographical area, e.g. for county records centres or local recording schemes, but we hope to be able to do this in future.

One dataset from iSpot has already been collated and made available on the NBN Gateway: shieldbugs and related species. This was done by recording scheme organiser Tristan Bantock in advance of the data download being available – respect to Tristan for manually trawling through the relevant iSpot observations and collating the details! This dataset can be seen at:  
[data.nbn.org.uk/imt/?mode=SINGLE\\_DATASET&dataset=GA000858](http://data.nbn.org.uk/imt/?mode=SINGLE_DATASET&dataset=GA000858)

***iSpot is an OPAL (Open Air Laboratories) project, and is funded by the Big Lottery Fund. For more about OPAL see: [www.opalexplorenature.org](http://www.opalexplorenature.org).***

To contact iSpot go to [www.ispot.org.uk/contact](http://www.ispot.org.uk/contact).



Children searching for marine life at an iSpot event in Cornwall

## Long-term Experiments

### Dr Victoria Cadman, ECT

By simulating changing climate, pollution and land-use practices like grazing, long-term ecological experiments help us address important questions such as how and how quickly species, communities and ecosystems adapt to change. They help us identify time-lags and tipping points in ecological systems and, through isolating and combining key drivers like temperature and rainfall, enable us to elucidate the mechanisms and processes that underlie change. Such experimental research informs conservation policy, Environmental Stewardship and feeds into best practice for land management, land recreation and restoration.

Yet, in spite of their value and concern over climate change, biodiversity and habitat loss, the UK's long-term ecological experiments are under significant threat. At least seven experiments have been lost in recent years and 11, including the second oldest climate change experiment in the world, the Buxton Climate Change Impacts Laboratory (BCCIL) are at significant risk. Of 14 priority sites, identified by 13 senior ecologists as most valuable to science, two have closed, three are wholly or partially unfunded and three have funds that will expire by the end of 2012.

The Ecological Continuity Trust, a UK registered charity, was established in 2008 with the support of 30 senior scientists. Through its charitable aims of **Research, Advocacy, Education** and **Excellence**, it supports long-term ecological experiments and their application to conservation and sustainable land management.

ECT is working with a network of scientists to raise funds towards future botanical surveys at several experiments, including the twinned upland and lowland sites at Raisbeck, Cumbria and Pentwyn in South Wales, designed to establish land management practices to restore and maintain botanical diversity of hay meadows. We are also helping to raise funds for the UK's longest running floodplain restoration experiment at Somerford Mead, Oxfordshire, as well as the world's longest running nitrogen deposition experiment on Wardlow Hay Cop, Derbyshire.

Whilst a key aim of ECT is to augment and diversify funding for existing sites we also aim to build capacity and promote good practice in ecological experimental research. In 2010 we established a bursaries scheme to support early stage researchers and students working at existing long-term experiments, facilitating PhD and student studies at Wytham arable-to-grassland reversion experiment into the effects of different grazing regimes on the ecosystem function of invertebrates, as well as research projects into evolutionary responses to climate change at BCCIL. We are also collaborating with other charitable organisations around both these sites to develop environmental education and community engagement initiatives to help raise awareness of the importance of long-term experiments to our understanding of the natural world.

Finally, as more sites face closure, institutions contract and researchers move on or retire, we are keen to collate data from experiments to make sure that they remains accessible for future research. In the short term, this may only be by seeking out and providing an archive for long-term records, in the longer-term it will mean ensuring that existing data are transferred to publicly accessible databases.

If you would like to help us with any of these aims, hear more, volunteer or receive further updates, please contact Dr Victoria Cadman at [victoriacadman@ecologicalcontinuitytrust.org](mailto:victoriacadman@ecologicalcontinuitytrust.org) or see [www.ecologicalcontinuitytrust.org](http://www.ecologicalcontinuitytrust.org).

## **What Can Online Recording Do For Us?** **- view from an LRC manager**

**Carolyn Steele, Dorset Environmental Records Centre**

Over the past decade more and more people and organisations have looked at some kind of online recording or submitted datasheet to improve the way in which data is collected. In Dorset this has led to a proliferation of systems and styles. They all cover the essential record elements (what, when, where and who by) but some are for local groups and some for national recording schemes. Although set-up to help simplify things (for each scheme) in reality the data becomes more fragmented, sometimes taking years to come into the local records centre.

As DERC are often asked for advice on setting up recording programmes, we felt there was an opportunity here to find a more cohesive system for Dorset. What were we looking for? Top of our wish list was something that could solve more problems than it created. Alison (DERC Database Manager) has spent the last 15 years correcting grid references, standardising recorders' names and correcting spelling mistakes. If we could find something that would help overcome some of these problems it would be worth further investigation.

It was about this time that Adrian Bicker came into DERC to demonstrate **Living Record**, the system he had been developing with the Dorset Dragonfly Group. Initially set up for one county it can now be used across England, Wales and Scotland. The solutions Adrian has put forward to the complex and convoluted world of recording are not unique to Living Record, but what appeals most is to have them all in the same system. We (the DERC team) have been involved during its early development and have enjoyed the opportunity to have some input into how it has dealt with some critical issues.

What follows will, I hope, provide a checklist of things to investigate when considering an online recording system. It is not exhaustive (every organisation is a bit different) but may provide some guidance to other LRCs in similar situations.

### **Grid references**

It is a fact of modern life for LRCs that we use GIS to help manage and present our data. Consequently we need grid references. Even experienced field workers can make mistakes and asking the general public for a grid reference is sometimes a step too far. There are some very good websites that can help, but usually someone needs to find a grid reference before providing a record.

**Living Record** uses Google maps which are familiar to many. Users can put in a grid reference or a location name or zoom into the right place and put down a marker. If you use a 4-figure grid reference, LR will place your marker in the SW corner of the 1km square.

### **Spelling species names**

This is not a huge problem in recording, but we do spend time correcting misspellings. More importantly trying to pin-down a record to a species (or accepted aggregation) can be tricky. **Living Record** uses checklists for species, so no-one needs to spell anything. Difficult species (e.g. polecat x ferret crosses, Taraxacum agg.) are included in the checklists.

### **Recorder names**

Once registered and logged in your name can be automatically added as the recorder. Although this won't delete all variations on a name it should help. If you are adding records for someone else, you can easily amend the recorder's name.

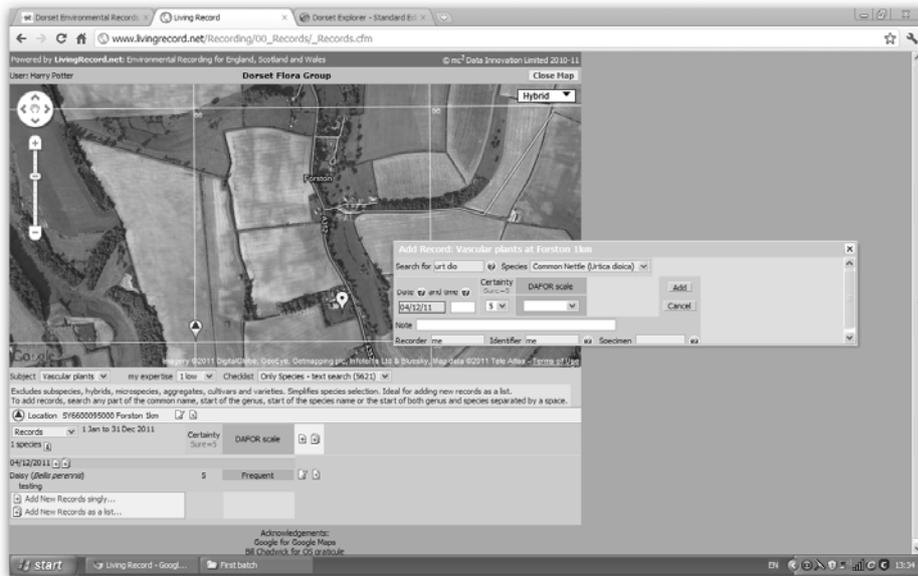


Fig. 1 Entering species records

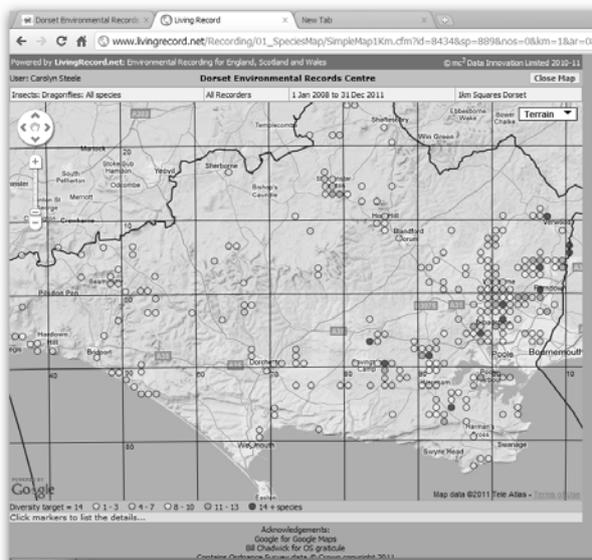
## Diversification

Although most records can be condensed into the essential elements of a record (what, when, where and who by), most recording groups prefer to use their own terminology and often record in slightly different way or use different methods. This is one of the reasons that new recording forms or online systems are set up for each new project.

**Living Record** was initially established for one subject (Dragonflies) and over the past year Adrian has added many more (mammals, birds, vascular plants and several invertebrate groups). The system is flexible enough to allow each recording group to modify the way data is captured. So, for example, you can record DAFOR for vascular plants or numbers for moth counts.

## Standardisation

Excel is often used as the link between our different recording systems (and those of our recorders). With Excel data can be moved between Recorder 6, GIS and MapMate. It is also a recognisable format for providing data to others. **Living Record** exports data into Excel compatible files for each subject. For an LRC this is lovely. We have already imported 2010 and 2011 dragonfly data into Recorder 6 without any problems. One of our VCR has imported Living Record data to MapMate and found it compatible, and another has imported butterfly data into Levana.



## Feedback to recorders

Like many of our counter-parts in other LRCs we regularly produce distribution maps for recording groups. I know they find them helpful, but it is not the same as having immediate feedback.

In **Living Record** recorders can view distribution maps to see how recording for their project is progressing. As Adrian began by working with the Dorset Dragonfly Group members who were keen to contribute to the British Dragonfly Society atlas, **Living Record** has been used to help encourage field trips into under-recorded squares.

Fig. 2 Dragonfly distribution map

If used well **Living Record** can also provide the county recorder with an ongoing update and they can give quick email responses to new records.

### **Creating your own dataset**

Many recorders would like to have easy access to their own records often using Excel files or Mapmate. In **Living Record** recorders can download their own data into an Excel file. They can also view their own data online, add to it and amend it until the data is verified and locked. Recorders can also use the Distribution Maps to view their data alongside other data on the system.

### **Duplicating data**

We all know the problem – solving it is much more complicated.

With **Living Record** people can see when data has been added. I recently attended a Dorset Flora Group fern day at Kingcombe in West Dorset. After the field trip I added the records I had accumulated. A few days later the group's Chairman added a few more. Anyone can now see that species list online. If there is something we missed, it can be added. This seems much more immediate and open than our previous way of reporting to members at the end of the season.

When promoting **Living Record** I do keep emphasising to recorders that records need to go into "the local system" once. They can put data into Living Record **or** direct to a recording group **or** a local records centre.

### **Local data**

The National Recording Schemes and Local Records Centres have different roles and responsibilities but we all need access to good data. As an LRC manager I want DERC to use and promote a system that can collect and verify data locally and then pass it on to the national schemes easily. If it can also help spread the workload for county recorders, that is another advantage.

There are usually systems in place to exchange data between DERC and recording groups within the county. It is usually the county recording groups that pass data on to the national schemes and societies. Unfortunately when data goes directly to a national scheme it can often be a long time before it is available for a LRC.

By contrast, where there are very few national experts for some difficult groups, **Living Record** can help provide an answer. The Ivy Bee Survey was set up on **Living Record** in the autumn at the request of Stuart Roberts (BWARS). With a bit of promotion in Dorset it has captured over 90 records and Stuart has already verified them. Stuart does not live in Dorset but the data is already available to DERC.

### **What is the future for Living Record?**

**Living Record** has been running in Dorset for 18 months and during that time it has collected over 25,000 records. It is currently being used by the county recording groups for dragonflies, moths, plants and mammals and in the next year will be used by the National Trust volunteers in Purbeck, Dorset County Council staff for recording alien plants and by Dorset Flora Group for recording arable plants and collating data on the next atlas. DERC will continue to support it, with help from our funders, but we hope others will join in. Adrian is currently developing add-on features for LRCs which will help them see how Living Record is being used within their county and to enable them to download data directly once it has been verified and locked. Adrian is also looking at online data verification - how to make it easier for county recorders to check data, particularly large datasets. Record Cleaner will work with **Living Record** but Adrian is investigating how to make this a more automated process.

I hope that **Living Record** will become part of the future of recording in this country and I see no reason why it cannot lie alongside other recording systems. In Dorset we will continue to receive paper records, emails and Excel spreadsheets; and be pleased to do so. But

where there is an opportunity, a new project or a new recording group, I am glad to have a system that I can recommend. And I know that any data captured will be feeding into DERC for use within the county.

If you would like to know more visit the Living Record website: <http://www.livingrecord.net/> or contact Adrian email directly on [adrianb@livingrecord.net](mailto:adrianb@livingrecord.net).



## PUBLICATIONS REVIEW

### **A Complete History of the Butterflies and Moths of Sussex**

by Colin R. Pratt. Privately published.  
Set of 3 volumes £65 + p&p.

This work is founded on the 1999 CD "A Revised History of the Butterflies and Moths of Sussex", and all of those enthusiasts who were kind enough to have bought that effort should view this current work as an updated hard-copy paper version with the addition of the histories of the micro-moths.

Buyers will have already read the introduction and history of each of the butterflies, the larger moths, and the pyralids and plumes, up to the end of the 20th century, but in this new account a significant amount of updated text has been added and a whole new set of distribution maps has been drawn up for almost every species by individually-tailored date-class running up to 2009/2010. Moreover, for the first time ever, a detailed critical history of each of the county's micro-moths is presented, this being an investigation into the 1,213 species which have been claimed to occur here. As the "Complete History" now examines the past of every lepidopteron ever recorded in Sussex - almost 2,000 different insects - even after allowing for the unavoidable blank spaces on some pages, it amounts to the equivalent of more than 1,500 A4-sized pages and contains 1.4 million words. Presented in three weighty volumes, this is the largest such work ever compiled for any county in the British Isles.

Volume One commences with the CD introduction that encompasses the

evolution of the study of butterflies and moths in Sussex, including chapters on the technical advances in collecting and recording, the 19th century's infamous specimen dealers, photographs and brief biographical details of our foremost scientific, amateur, and professional collectors, and the modern-day recorders; a large and profusely illustrated section of chapters is also included on the history of all of our leading hunting-grounds - over 500 historical topographical monochrome photographs of the most important habitats are reproduced, these being supplemented by sequences of more than 100 geographical maps, some originally drawn as far back as the 16th century. This volume ends with the new 430 page section on the micro-moths, which includes well over 1,000 pioneering distribution maps. Modern nomenclature dictates that Volume Two encompasses the histories of the pyralids and plumes, the butterflies (which approach 200 pages alone) and the geometer moths, this extending to almost 600 pages in all. Volume Three covers the hawks to the fan-foots, is followed by a summary and analysis of the results, and runs for nearly 500 pages.

Every locality ever publicly known for every butterfly and moth is represented. Dating from 1768 to June 2011, all of the most important Sussex records are individually listed by date, locality, and viewer, and if necessary discussed, this being the case in more than half of the butterflies and macro-moths, and for just about all of the micros. Extinct, declining, and colonising species are dealt with in especial detail. In all, the books include around 3,000 updated distribution maps to the definition of a two kilometre square, depicting well over 100,000 records.

Dozens of statistical bar charts illustrate the annually-changing levels of immigrant Lepidoptera since the middle of the 19th century, and many more depict the numerical changes that have taken place within the more volatile of the macro-moths over the past 41 years from the longest-running nightly-counted single locality mv-sourced moth trap in the UK. Historically accurate average and extreme flight-times in Sussex, and lists of our own feral food plants, have been collated for every species. The individual limits of variation and all of the known races, forms, and major aberrations of every adult macro-lepidopteron are also delineated, the changing proportion of melanism here being fully explored. All of this is rounded off with a list of the 4,000 published references to Sussex entomology referred to in the text.

This is a detailed reference book which should provide perspective for current enthusiasts and base data for researchers. But the fundamental purpose of the 'Complete History' is to maximise the chances of the viable survival of as many of our butterflies and moths as possible, so that later generations can also wonder at some of the sights that I have been privileged to see and recall from the past 60 years. To this end these volumes are being produced on a non-profit-making basis - I am acutely aware that financial restraints can affect the spread of knowledge and enthusiasm, this especially being the case with the young who are the seed-corn for the future. The price for each set of three volumes is £65.00 plus p&p (approx. £16); part-sets will not be available. Requests for collection will be sympathetically accommodated wherever possible.

Requests for orders should be directed to:  
Colin Pratt, 5, View Road,  
Peacehaven, East Sussex, BN10 8DE.  
[colin.pratt@talk21.com](mailto:colin.pratt@talk21.com)

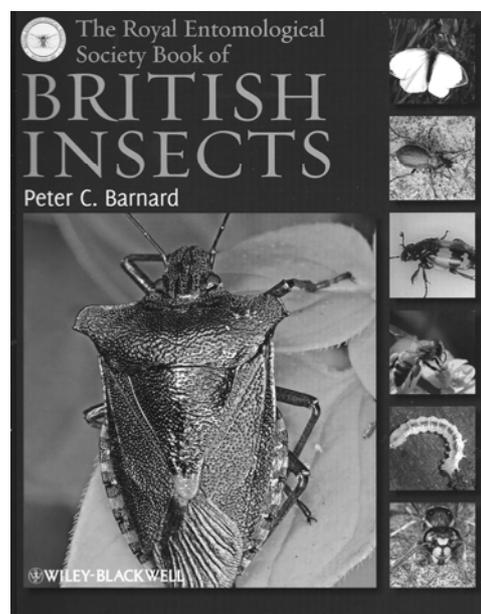
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### **The Royal Entomological Society Book of British Insects**

by Peter C. Barnard, 2011, xi + 383 pp.  
(Wiley-Blackwell, 2011). Hardback, RRP  
£39.95. ISBN 978-1-4443-3256-8.

The Royal Entomological Society of the title is that of London and the author is one-time editor of that Society's *Handbooks for the Identification of British Insects*. Both have a long history of service to entomology in the global context and to studies of the British insect fauna. The author's stated intention is to make this book both a key reference work for the professional entomologist and a readable and attractively illustrated account for the interested student.

In essence the book is a summary of what is known about the systematics and biology of British insects. For every family there is a necessarily brief account of the usual habitat of its members and their feeding preferences and other notable behaviour. The names of all British genera are listed, usually grouped under their respective subfamilies. As the work is fully indexed, it is possible, knowing the generic name of an insect, to find its place in the systematic hierarchy and at least an inkling of its biology in a few seconds. All the illustrations are full-colour habitus photographs, the number of which somewhat exceeds the number of families, so there is a reasonable chance that the user will also get an idea of the



general appearance of the insect behind the name.

A major feature of the work is its bibliography or rather bibliographies, one for each order. Sometimes the references in these are to individual works but often they refer to the relevant parts of *Identifying British insects and arachnids: an annotated bibliography of key works* (edited by Barnard himself, published in 1999 by Cambridge University Press). It is really only by consulting the two works together that users will become aware of the gaps in the literature on identification and, perhaps, be inspired to fill some of them, a declared subsidiary aim of the *Book of British Insects*.

The arrangement of the information is relentlessly systematic. Chapter 1 concludes with a summary of the taxonomic arrangement adopted, down to Family level. The remaining 27 chapters cover one Order each and follow a common plan. A general treatment of the Order contains a brief descriptive account, a discussion of the available literature, a panel repeating the classification down to Family, this time adding the number of British genera and species in each, and a list of the species that are protected under the Wildlife and Countryside Act 1981 and those for which by Biodiversity Action Plans exist. Then follow the family accounts with lists of genera. Finally there are full bibliographic references to the works referred to in the text and the addresses of any relevant websites.

How well does the *Book of British Insects* succeed in its primary aims? As a reference work, its authority and integrity are indisputable. Both the composition of the British insect fauna and ideas on classification are constantly changing. Like all reference works, it must inevitably become out of date but it will undoubtedly retain its usefulness for many years to come. As to its readability, it is difficult to imagine anyone reading the book from cover to cover. Nevertheless, it does furnish an informative and well illustrated general introduction to the many groups that lack popular guides. The idea for the

book was proposed by the Hon. Secretary, John Badmin.

**W.R. Dolling**

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### ***The South Yorkshire Plant Atlas***

G.T.D. Wilmore, J. Lunn and J.S. Rodwell, Yorkshire Naturalists' Union in partnership with the Yorkshire and Humber Ecological Data Trust 2011. Design: Chris Gaughan, Designwing, Bradford and printed by Crowes, Norwich.



This work is the first major Flora covering the former administrative county of South Yorkshire and follows on from the work of F Arnold Lees *Flora of the West Riding* published 120 years earlier and covering a much larger area. Recording for the *Plant Atlas* started in 2001, although many botanists had recorded for the millennium *New Atlas of the British and Irish Flora*. Within nine field seasons records had been obtained from all the 1665 full or part 1km squares covering mainly VC63 but also parts of VC54, 56, 57 (along the south-west edge) and a very small portion of VC58.

Each chapter opens with a double page photographic spread illustrating the importance of the chapter. Chapter 1 by Geoff Gaunt covers the geology with extensive colour maps and photographic illustrations. Chapter 2 by John Rodwell reviews the vegetation communities in South Yorkshire ranging from the Pennine tops in the west to the magnesian limestone and heathlands forming the Humberhead Levels. The author also discusses the important communities remaining as a result of coal mining and

other industrialisation of the county. In Chapter 3, Geoffrey Wilmore considers the significance of the alien and adventive flora whilst chapter 4 is a tour of botanical hotspots. This is one area of this work which would significantly benefit from a small 40 pages pocket guide with maps to places that people may safely visit without obtaining special permission. Chapter 5 is a summary of Botanical History of the area by Graeme Cole who has significantly expanded on this topic in his separate publication. In Chapter 6 Jeff Lunn using the special knowledge he has acquired of the area both as a volunteer field naturalist but also over 25 years professionally with the Nature Conservancy Council and its successor bodies sets the scene for plant conservation. Chapter 7 is the atlas. Many species have an accompanying map with a colour background showing altitude. There are many colour illustrations of the species. Places mentioned in the text are geo-referenced in a five-page gazetteer, which is followed by a glossary of nature conservation terms, a bibliography and an index.

The book runs to 458 A4 pages with a hardback cover and costs £54.50 including post and packing from Summerfield Books, although Geoffrey Wilmore has some for distribution without postage. My main criticism reflects around price. My son-in-law, who works in retail distribution, comments that at this price, the purchaser would need spare disposable income or has a very strong interest in plant distribution. As YNU Treasurer, funding the design and printing was challenging.

The assistance of records centres operated by Doncaster MBC, Rotherham M.B.C. and Sheffield Ecology in producing this atlas is acknowledged together with the assistance of Mark Wills and Simon Pickles with technical advice on Recorder 6 is also acknowledged.

**John Newbould**

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***The Story of South Yorkshire Botany***  
by Graeme L D Coles, Yorkshire  
Naturalists' Union; 158 pages including  
black and white illustrations.

The book gives an account of the study of botany in South Yorkshire from the 16<sup>th</sup> to the late 20<sup>th</sup> centuries giving an insight into the botanists themselves, the natural history societies of the area and also the plants past and present. There is a 14 page bibliography citing books, papers and associated journals with the earliest reference being of J. Gerard in 1587 *The Herball or General Historie of Plants* whilst the latest is a paper by the reviewer dated 2001.

The final major chapter is a 35 page transcription of *Flora Sheffieldiensis or a catalogue of plants observed to grow wild in the environs of Sheffield* dated 1800 by Mr Jonathon Salt. For the modern reader, each plant has been ascribed its modern name following the nomenclature of Stace (3<sup>rd</sup> edition). The fascinating thing about this section of the book is to take two examples: *Peucedanum silaus* or *Silaum silaus* is listed as being present in Meadows near Roche Abbey and is still there today (at Maltby Low Common Reserve). *Daphne laureola* is described as being common about Maltby where it is still present today. It will be interesting to use the new published *South Yorkshire Plant Atlas* to work out the losses.

The book also contains references to local societies. It is fascinating to read about the Sheffield Literary and Philosophical Society established in 1822 together with the Sheffield Botanical Society, which is only known from a few newspaper references. The book concludes with an eight-page index.

Graeme Coles tells me he spent six years, and many nights, in a Travel Lodge researching this book. Mark Seaward, who acted as editor, assisted him in the final stages. It is a worthy complement to the associated *South Yorkshire Plant Atlas*. Price for the B4 softback publication is £13.50 available from YNU Book Sales, 3 Brookmead Close, Sutton Poyntz, Weymouth DT3 6RS cheques payable to "Yorkshire Naturalists' Union".

## PLANT GALLS.

Members of the British Plant Gall Society have been quite busy in the years leading up to 2011. Not only has the Collins New Naturalist 117 *Plant Galls* by Dr Margaret Redfern appeared giving an important insight into the gall causing species, but we also have two new books aimed at identifying plant galls.

### ***Britain's Plant Galls – a photographic guide***

by Michael Chinery published by WildGuides Ltd. Old Basing, Hampshire is a small book costing £10 - £14 depending on where purchased. This book is excellent for people new to recording plant galls. It opens with a very brief introduction to what galls are and what causes them. The book is split into three sections: Oak Galls, Galls on other trees and shrubs and Galls on herbaceous plants. Each species not only has text but one or more photographs to assist identification. The beauty of this approach is that even a gall recorder who is experienced is able to see previously over-looked species. For example, I do not recall seeing the gall *Dysaphis crataegi* on Hawthorn, but next year, I will be looking carefully for this bright red gall on the leaf.

The section on galls on herbaceous plants is very useful. Many of these galls are easily overlooked. For example, recently a small group of us were surveying wood pasture at the National Trust's Ringmoor and Turnworth property in Dorset, when one member of the group found the gall *Dasineura helianthemis* on Rockrose. None of us had seen the species before and we could quickly confirm the identification. One disappointment is that there is no photograph of the gall *Trioza crithmi* on Rock Samphire. Bill Ely and I spent quite some time looking for this at the tip of Portland Bill in a gale in mid-October.

### ***British Plant Galls***

by Margaret Redfern and Peter Shirley published by Field Studies Council Aid Gap series. £28 plus £3 p & p from FSC. Originally published in 2002 as a 324 page field guide measuring 240 x 175mm, this essential guide to recording plant galls is now 432 pages. With the new book weighing 1.14k, my old book is still going out in the field, unless transport is very close.

The identification keys are based on first identifying the host species. The new work differs from the 1<sup>st</sup> edition where fungal galls were separated from insect-causing galls. In the new work, all galls are listed under the host species. Once again each species may be keyed from the host plant with the gall causer often illustrated with line drawings by Michael Bloxham. There are numerous name changes as in the intervening years, new work has resulted in more precise identification of the gall causer. For example, the gall originally known as caused by *Cecidophyes galii* is not now considered to be present in Britain but is caused by *Cecidophyes rouhollahi* although the galls of the two species are identical. The mites, therefore need to be identified by an expert. There is also a certain amount of change between *Eriophyes* and *Aceria* with, for example, *Eriophyes inangulis* now *Aceria nalepai*. In managing my Excel database of plant galls, I do not make changes without both books being available in order to trace the derivatives.

The book has eight pages of colour illustrations at the end. Using both these books together is an excellent way forward for a Cecidologist.

**John Newbould**

## Evolution or Revolution? – the impact of technologies on biological recording

### Report from the 11<sup>th</sup> annual conference of the National Biodiversity Network

Trevor James

The NBN has been all about new technological approaches to wildlife data communication since it started, and has to a large extent taken the lead in driving these developments forward since its inception.

This Conference was designed to be both a window on ‘where we are’ at the moment, as well as a thinking session for the future. As it happens, it also coincided with significant shifts in potential Government thinking in relation to the environment, and especially on the value and use of environmental data. As a result, we were fortunate to have the opportunity to hear from the Rt. Hon. Richard Benyon MP, Minister for the Environment, as our keynote speaker, opening the event. His address was set against the backdrop of an acknowledged 30% decline in key environmental indicators over the last 10 years while also he reflected on the enormous effort contributed by volunteers (BTO alone contributing the equivalent of 225,000 staff/days a year) on data collection. He noted the importance of new technological approaches, and the need to draw in younger people. He also put the work in the perspective of the Government’s recently produced White Paper and Strategy for the environment, and their underpinning studies, summarised by the UK Environment Assessment. As such, biodiversity monitoring is central to what they need, and it is therefore not surprising that they have stated their intention to support a ‘national biodiversity network’, part of which is a three year agreement with the NBN Trust to support its work.

Generally the Minister’s speech was received well, but a few questions remained. Two particularly testing ones included one from ALERC (Nicky Court), who asked what could be done to ensure that the local arm of Government, represented by the Department for Culture and Local Government, was working to the same priorities in terms of support for biodiversity monitoring at the local level as Defra is; while the fraught question of ensuring that the new planning policy framework does not lose good practices built up over recent years was raised by Prof. Jonathan Silvertown of the Open University.

Following on from high level policy, David Roy of the Biological Records Centre started the main proceedings with a talk focusing on the way that new technologies are underpinning the work of the national recording schemes. He looked at the way that the uptake of *Indicia* online recording is set to transform both data flows and data quality. Online resources such as Bayesian keys, used in ISpot, were also noted; while a newly-emerging opportunity lies with the use of ‘apps’ for mobile devices, tapping into social communication media. Online collaborative tools were also highlighted, such as the recently launched Online Atlas of the British Flora, where material from various sources are brought together in one resource. With the use of data, there are also new developments in using specialised analytical tools that can make the best use of disparate data. He summed up, though, by emphasising that we need to work at developing the ease with which these new tools can be used by people.

Paul Gilbertson, NBN Trust’s web development officer, was next to speak, this time about the recently launched new version of the NBN Gateway Interactive Map Tool. Paul reviewed where the NBN Gateway had got to, in terms of quantity of data (68 million records), and the strains this was beginning to put on the system to deliver. The new Interactive Mapping Tool has been designed to greatly improve and diversify what the Gateway can do, and he showed some of these new features, such as the capacity to map data quantity by grid square, and to produce integrated maps of species and habitats etc. Beyond the Gateway itself, the system also delivers data through its web-services, and he demonstrated a few of these, such as the ‘Scotland’s Environment’ site. Now the

development team are consulting on possible changes to the data access controls on the Gateway, aimed at greatly speeding up data delivery. He emphasised that this was not a 'done deal' and that the NBN Trust is keen to hear people's views, positive or negative, on the proposed changes.

Charles Hussey, of the Natural History Museum, and in charge of the NBN Species Dictionary, was next to speak, with a subject that could have been very dry indeed. But his introduction, showing slides of Victorian ladies embracing the intricacies of natural history to the extent of evidently expecting the public to know exactly which species of Tardigrade was which, ensured attention! He also demonstrated only too well the problem of 'multiple names' for a single organism (80,000 species in the UK, but over 300,000 names in the system for them!). He then went on to talk about the way the Dictionary works, and in particular the way that its re-development is being planned in conjunction with international initiatives to 'sort out' the problem through a Global Names Architecture, which would be supported by a broad taxonomic and user community. He finished by saying that he thought the Species Dictionary had done a good job in keeping up with changes – they have carried out 558,750 edits to names in it over as little as 8 years, which is just under 8 changes an hour throughout that period!

Before our break for lunch, first of all Sally Rankin, recently having taken on the reins of overseeing the *Recorder* programme from JNCC, along with John van Breda and Mike Weideli, working as a consortium, gave us a brief update of what the new arrangements are, and contact details. Then, Geoff Coates of Syngenta, our sponsors for the event, gave us an eye-opening talk about the work that his company was doing in relation to the agricultural environment, and also demonstrating why it is interested in the biodiversity data NBN Trust deals with. Syngenta have been engaged from their outset in 'greening' the Common Agricultural Policy of the EU. In particular, they were involved with the 'Buzz' Project, studying bee habitats in relation to pollination. The findings from this research led to further projects, notably 'Operation Bumblebee' in 2005, working alongside specialists from BWARDS, as well as research institutes and government, and aimed at improving available habitat across the UK in farmland, with focused flower mixes and management regimes, which have seen substantial improvements, so much so that the project has been expanded to become 'Operation Pollinator', encompassing other species across 14 countries in Europe.

Lunch time displays and demonstrations were as wide-ranging as the talks, and many backed up some of the latter. Displays ranged from Syngenta's stand demonstrating their bee pollination work; through John van Breda's demonstration of the new *Instant Indicia*; a demonstration of the use of *NBN Record Cleaner* by Graham French; David Mitchel of ExeGesIS demonstrating their facilities for data managers; a back-up demonstration of NBN Web-services by Jon Cooper; Commonwealth Agriculture Bureau (CABI) – showing off their 'Plantwise' programme; OPAL's 'ISpot', showing its Bayesian keys; UK Earth Observation Framework; and Charles Hussey showing us more about the NBN Species Dictionary re-development.

The NBN Conference has been the venue for the Sir John Burnett Memorial Lecture for the last few years, and this year, the NBN Trust's outgoing Chairman, Sir Neil Chalmers, who took over from Sir John before the latter's death in 2007, took the opportunity to give us his thoughts on 'The UK's biological records – how useful could and should they be?'. He spoke about the wide range of data that have been gathered over a long time in the UK from local studies in particular; and that participation by a wide range of people is fundamentally important. He asked what the NBN added to this: bringing data together for anyone to use; and making data accessible for multiple uses. For the future, we need to define the wide-scale potential uses of data. There is a plethora of strategies, but we need more focused technical development to make data more immediately useful, such as in planning for High

Speed Rail. Evenness of coverage of data needs to be improved, alongside improvements in data quality and their systematic collection. Finally, we need to enable more user-defined responses to the system, to assist with specific enquiries.

There then followed three other focused talks – the first two focusing on technical developments from the use of the NBN's tools and outputs. Dan Jones spoke about 'Second Site' the Yorkshire & Humberside Environmental Data Network's web-based system for assessing data in relation to planning applications. He approached the talk through looking at the problem first – a multitude of potential data sources, none speaking to each other. The issue of 'data standards', as he pointed out, remains to be sorted! Maybe it never will. In the meantime, they have been developing systems that allow flexible and updateable data communication. This is capable of pulling in data in whatever format from elsewhere, and can allow editing of these data. It can also carry out filtering for analysis, and can make use of data derived from a very wide range of sources, including things like Wikipedia, or the BARRS habitat reporting system, or even sources such as the photo website Flickr and other social media. As such, it is potentially an extremely powerful method for bringing information together. He faced several interested questions, not least the question of funding. At the moment, there is little funding to support this development work. The question was also asked whether national-level web-services needed to be developed to augment the local capabilities in 'Second Site', but, as Dan pointed out, at the moment it is locally focused, and so the lists of species or other attributes it might need tend to be at the local level.

Martin Horlock followed with the experiences of Norfolk Biodiversity Information Service in implementing *Indicia* for their public-facing online recording. The need for local records centres to 'embrace a wider audience' than just their limited pool of recorders had been recognised for a while, despite doubts as to their use from 'experts'. Their implementation of *Indicia* was as a response to this, although Martin doubted whether such 'outreach' really did much to encourage a 'new generation of recorders', as is often claimed. However, the system does increase NBIS profile, allows streamlining of data flows, and improves data quality. *Indicia* in particular allowed NBIS to make use of the BRC's online 'data-store', which saved local work. The main issue they found was the need to ensure good publicity for surveys. However, on balance they had been pleased about its robustness, and about the improved data quality that has resulted from public surveys. They are now looking at developing *Indicia*-linked forms for use on e.g. mobile phones, and the use of online sourcing of data browsing facilities through open source sites like 'ecoRelevé'.

Our final talk was a thankfully lively one, given the late hour, looking at marine data, given by Becky Seeley of the Marine Biological Association. First she highlighted the differences, as well as the similarities, between mainstream terrestrial NBN data and marine data, not least their use of very different grid systems. As we had found out from the Minister earlier, marine data are a hot topic, especially given the urgent need for better quality data to support Marine Conservation Zones, and to engage with the rapidly increasing incidence of non-native species. Becky outlined the marine data standards being promoted by MEDIN, and pointed up the integration of marine data with NBN, such as the channelling of online data acquisition through the *Indicia*-based RISC (Recording Invasive Species Counts) system. Such streamlining of data acquisition and improvement of data quality was again a key issue, and demonstrated the 'real benefits of technology'. However, she said that it "may make things easier, but not necessarily simpler", which was a feeling probably quite a few of us had by the end of the day. However, she also did wind up by saying "Those who don't engage may get missed out", which was a message for all those that may not have attended the event to ponder!



## Mobile apps – the future of biological recording?

Lucy Carter

In September this year, the Natural History Museum as part of OPAL launched its first mobile phone app. The Bugs Count app was designed to support the OPAL Bugs Count survey which began in June 2011. The free app features a guide to the most common groups of invertebrates, including slugs, beetles, spiders, bees, butterflies and woodlice. Using the app, members of the public can begin to identify the invertebrates they encounter, whether they're walking in the countryside, or waiting for a bus in the city centre. As well as providing a simple ID guide to broad groups of invertebrates, the app also facilitates the submission of biological records for six species of invertebrate that OPAL calls the 'Species Quests'.

The Bugs Count survey itself has received over 30,000 biological records of the 'Species Quest' invertebrates – the Small Tortoiseshell butterfly, Green Shieldbug, Devil's Coach Horse beetle, Leopard Slug, Two-spot Ladybird and Tree Bumblebee. However a relatively small percentage of these records were backed up by a photo, and therefore the majority cannot be verified. To try to remedy this, the app was designed to make photo submission easier, to increase the proportion of records that could be verified. As such, it represents an experiment, and only time will tell how effective this may be as a tool in gathering biological records. Unfortunately the timing of its launch coincided with Autumn when fewer of the Species Quests are around, so the real test of its effectiveness will come in Spring/Summer 2012. Watch this space for an update next year!

### The advantages of mobile technology

Certainly mobile apps have a number of advantages over paper or online recording. Location data (in lat long format) are automatically gathered and attached to any photos taken using the phone's in-built GPS, eliminating the need for recorders to work out grid references for their location or identify their location on a Google map (which can be quite tricky in rural areas). Photos can be automatically sent to the survey owner (in this case the Natural History Museum) at the time they are taken, eliminating the step of loading photos from a camera onto a PC and attaching them to emails or online recording forms. ID guides can be built into the app, to help recorders to confirm their identifications before submitting photos, and submitting the record can take place within seconds of seeing the organism in question. This immediate submission reduces the drop off rate between the number of people creating biological records and the number who go on to submit them to a recognised survey or scheme – an issue which OPAL has experienced in all its national surveys. Finally, using such technologies may also help to draw younger audiences into biological recording.



### And the disadvantages...

The technology is not perfect, and an initial observation is that small organisms can be tricky to photograph clearly on a mobile phone, resulting in the submission of some blurred photos. The extent to which this is a problem depends on the species you are recording. OPAL has found that for the Tree Bumblebee this is not an issue, as the colour pattern can be seen to confidently ID it, even if the photograph is out of focus. However for many species, a blurred photo is no good. Some of this can be solved by providing some guidance to recorders – a distant but clear image is much better than a very close but blurred one! Clearly the choice of species you wish to record affects your likely success too. Mobile apps may not be

suitable for very small or fast moving species, but lend themselves well to larger, slower moving species.

Of course, biological recording using mobile app technology is restricted to those with a smart phone, but this technology is spreading rapidly and reducing in cost such that it is likely to be widespread in just a few years. It also relies on there being a mobile phone signal at the location you are recording which in remote areas is not always the case, but again this is improving all the time.

### **Mobile platforms**

The OPAL Bugs Count app is currently available on iPhone, Samsung Galaxy S and HTC Desire phones, with an update coming soon to broaden it out to more Android models. It can be downloaded free from the AppStore and Android Market – just search for ‘bugs count’. As mentioned above, this is the NHM’s first app and is very much an experiment so we would welcome your feedback. Please email any comments to Lucy Carter [lucy.carter@nhm.ac.uk](mailto:lucy.carter@nhm.ac.uk). Thanks!



## **NFBR AGM & CONFERENCE 2012**

### **Biodiversity data: in policy and practice?**

Great Hallingbury Manor, Bishops Stortford.

19 - 20<sup>th</sup> April 2012

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