NFBR

NATIONAL FORUM FOR BIOLOGICAL RECORDING

Newsletter 52 – August 2016

Contents

Cover photo: Biological recording in action during the 2016 NFBR conference field trip (photo by Rich Burkmar)

Editorial

Here is NFBR Newsletter no. 52, packed full of biological recording goodness. There are thoughts, accounts and impressions from what we think was a very successful 2016 annual conference at Lancaster – it was good to meet so many of you there, and for those who couldn't make it we hope the newsletter will convey some of the atmosphere.

Good news: NFBR's membership is growing (see page 30) – but it has plenty of scope to grow even more! If you like what you see in this newsletter and wish to support NFBR in the work it does (some of which is outlined on page 28), please do join if you're not already a member, or encourage someone else to take that step if you are. You can now join quickly and easily via the NFBR website, and every membership helps support NFBR (which is an entirely volunteer-run charity) as well as enabling us to better represent the views of those involved in biological recording.

The 2016 conference focused on National Recording Schemes and Societies, and their links with other parts of the biological recording community, and of course with NFBR. See page 25 for some exciting updates and developments for some of the national schemes, including some new schemes being established.

All this recording activity depends on there being a supply of enthusiastic and knowledgeable recorders into the future, and two articles address this issue, covering the new BioLinks project from FSC (page 21) and an insight into the life of a Natural Talent Trainee (page 22).

Finally, don't miss an entertaining account (page 31) of the hazards of habitat mapping, using all the latest gadgets and with top tips on how to prevent your drone getting barnacles on its bottom.

Thanks to all who have contributed words and images for this issue. Next up is newsletter 53 in the winter, 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 Twitter feed, or on our Facebook page.

Newsletter 53 will be the tenth that I have edited during a very enjoyable five-year period, and after that it will be time to find someone with fresh ideas to take NFBR's communications forward. It's a great opportunity to get to know others involved with biological recording, and there's lots of support available from the NFBR committee members. If you're interested in taking on the editor role or would like to find out more about volunteering for NFBR please do get in touch.

Martin Harvey, August 2016
editor@nfbr.org.uk

The **deadline for sending in articles for newsletter 53** is
1 December 2016

NFBR Conference 2016 report: National Recording Schemes and Societies - celebrating the past, looking to the future

Many thanks to Steve Whitbread (Northamptonshire Biodiversity Records Centre) and colleagues for providing this diary – it's almost like being there!

Sandwiched between the A6 and M6, Lancaster University occupies a largely self-contained campus in a green and leafy setting on the very doorstep of the Forest of Bowland AONB. This year's NFBR conference provided my first opportunity for a visit, and turned out to be even better than the programme of abstracts promised. As others commented ...

> A most enjoyable conference. The best conference I go to each year.

> Great conference … Lots of energy in the room and constructive, lively discussion and debates.

NFBR conferences usually have a cross-cutting theme although, ahead of the formation of the Association of Local Environmental Records Centres, the 2001 conference did focus on Local Records Centres. Yet, given their importance in the collection, curation and quality control of UK biodiversity data and to the National Biodiversity Network as a whole, it is somewhat surprising that it has taken NFBR a further 15 years to devote a conference programme to the topic of the National Recording Schemes and Societies (NSS), celebrating their past activities and also looking forwards.

> This year the NFBR and BRC conference had a great theme of celebration and recognising achievements of national schemes and societies. As a first timer to this conference I was really excited about attending and was not disappointed. The people were very friendly, the talks were interesting, and I had a great time.

This was partly because there was recognition within NFBR's Council of a need to encourage greater recognition of and support for NSS, particularly those dealing with less popular groups, and to identify ways in which NFBR might be able to contribute - linking in with the goals of the new NBN Action Plan.

But let's handover to your Day 1 correspondent, Derek Whiteley (recently retired manager of Sheffield and Barnsley LRCs, Secretary of Sorby Invertebrate Group, Sorby Mammal Group, and "born again" citizen scientist). *What did you think Derek?:*

I thoroughly enjoyed the morning session - it got us off to a flying start. Stuart Roberts' keynote address on the role of volunteers covered all the bases for me and he spoke with great authority on several issues dear to my heart. I took home a pledge to clarify citizen science on my home patch, as an organiser of recording schemes and a citizen scientist myself. Yes, I have already made a start by promoting our official local recording schemes and evangelising iRecord.

Following discussion over lunch I was pleased to find out that I am not alone in thinking that some organisations are on the citizen science bandwagon because it is trendy and are not paying enough attention to the quality of the end products. Others have been doing it very well for decades – the Bees, Wasps and Ants Recording Society being a shining example. BSBI is another and Louise Marsh provided a nice case study of a local group really enjoying their fieldwork and recording, with support from the 'big guys' (gender neutral), as and when required. It is a model that could apply to all groups in all areas. I was inspired by the "let's get on with it and have a good time" attitude whilst striving to improve quality. Now that I am newly retired I can do the same.

Damian McFerran brought many years of experience working with a large regional records centre and his case studies of linking with national schemes acted as a timely reminder that if we could all work like CEDaR the world would be a better place! I have never been to Northern Ireland, but I want to go now!

Thom Dallimore flying the flag for mosquitoes and springtails inspired me to go home and take another look at two groups that my pooter overlooks on the grounds that they are too difficult. I'm looking forward to Thom's new key on British mozzies, and I promise to have a go at the Collembola, at least the "easy hits", if only for something to do in the winter. How about you?

Overall I went into lunch thinking that there is a lot of good stuff going on. Yes, we have problems, many of these created by new technology and social media that is proliferating faster than Himalayan Balsam. But if the LERCs can remain funded and strong and the National Recording Schemes remain active, authoritative, focused and in touch with grass roots members and the public, and we all try harder to talk to each other – then it will all be OK. [*Many thanks, Derek.]*

The afternoon workshops tackled a range of topics from social media use to the rather more focused issue of site quality assessments using species data, giving delegates opportunities to share experiences and discuss the practicalities. The group examining the NBN's data sharing badge proposals were commenting on and helping to refine what is potentially a hugely important initiative. I roamed between the groups: the very active discussions and feedback session demonstrated participants' interest and commitment.

I will use the NBN data sharing badges and encourage others to do so. I will use the Tom.Bio taxonomy visualisation tool for teaching and engagement.

I have found new projects and opportunities for my recorders. I have gained motivation to start a project in my area and rejuvenate another.

A novel and welcome addition to our Day 1 programme was the post- conference dinner talk by Steve Garland and one Derek Whiteley. This was a trip down a very winding memory lane to a time before NFBR, to Big Chief I-Spy, and to how two young recorders got started, and their (mis)adventures along the way as they became wiser, and decidedly skilled (retaining their enthusiasm and obvious delight in wildlife), via museums, natural history societies, recording schemes, records centres and involvement with NFBR, plus a multitude of records and others enthused. To iSpot and beyond. It was a hoot - and decidedly informative and evocative all at once.

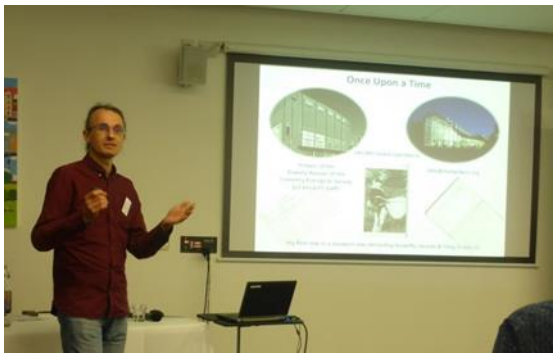
Day 2, Friday the 13th, was the full 'talks day' (with the lunchtime AGM as centrepiece, of course). I won't attempt to emulate Derek's first day summary, so you'll have to check out the speakers' presentations for yourself. It's more the highlights and the overall impression that I wanted to convey.

The opening talks on water beetles by the hugely experienced Garth Foster (with the Balfour-Browne Club's highly planned approach to recording now on the brink of Phase III) and the efforts of the fledgling Earthworm Recording Scheme as set out by Keiron Brown (now also leading the Field Studies Council's Biolinks Project) provided a nice counterpoint to each other and evoked various issues raised by Stuart Roberts.

Successive presentations chimed with their key points, whether involved with terrestrial, freshwater or marine environments and national schemes or local societies. There is a lot of common ground and the potential for collaboration and better support.

Pete Boardman shared the importance of mentoring in his talk and how sharing knowledge, skills and time has always been a part of the recording community. But this theme wasn't just limited to Pete's talk. I was really struck throughout the conference by the personal stories of gratitude to the generous mentors along everyone's way. The relationships made, and knowledge shared, and fun had are all part of the joy of recording wildlife.

It all prompted some lovely memories of my own mentors and is a timely reminder to really think hard about the opportunities we can help create at work for people to get together and enjoy learning from each other and having fun together. *Maria Longley, GiGL*



A lot of fun was to be had from Darren Mann's tour de force introduction to the value of museum collections, not least in the value of retaining links with the past – distant and recent – through well-curated specimens, and through support for recorders now and in future.

The afternoon dealt not so much with what the NSS had accomplished or were doing but with the tools and resources that might enable them (and the rest of us) to achieve more, to get more out of datasets in different ways, to help get more out people and to help them get more out of what they are doing. This set the scene for the results of NFBR's NSS survey (as presented by Steve Prentice – see page 12 of this newsletter) and a discussion of NSS needs and how these might be addressed.

It has been a fantastic opportunity to learn from other recording schemes.

Overall impressions

There are clearly a number of things that the NSS might do in learning from each other and collaborating where appropriate to help themselves, and, in connection with looking to the future, areas where NFBR and others could do more to foster their development or encourage greater support for their efforts. The protection or even expansion of the resources on which these very largely voluntary activities depend is vital. NFBR's key role here is perhaps an expansion of its existing advocacy, guided by what the NSS identify as most useful to their needs.

Graham Walley (NFBR Chair) wraps up proceedings

The original and upcoming State of Nature reports wouldn't have been possible without either the long years of effort of the national schemes and societies and all the volunteers on which they depend for coordination and presentation as well as for recording. It also wouldn't have been possible without the investment by the partnership, and the RSPB in particular.

The first SoN report drew very public attention to changes in UK wildlife, particularly the declines since the 1970's. A review of subsequent targeted action, policy making and investment by UK governments and national agencies might suggest that its impact was

rather less than might have been hoped. Just within England, the decline in Natural England's budget and consequent spending on biodiversity evidence are hardly anything to cheer about whilst the much vaunted (and much postponed) 25 Year Environment Plan has yet to appear even in draft form.

SoN also highlighted for how small a proportion of species it was possible to show trends because of a lack of data. So it is also worth asking what measures have been put in place to support or target future recording effort and biodiversity information use and what wider recognition there now is for the value of wildlife recording, even within Defra. On a more positive note the new NBN Strategy offers lots of scope for not only supporting and making wildlife recording more effective but for promoting it ***and*** the support infrastructure on which it depends. Looking back over the last 30 years, NFBR has achieved some notable successes but there is clearly a need for it to continue its work and become a more effective advocate and facilitator.

As a first time attendee I would like to say thank you to everyone I met for the warmth and openness. Lots of ideas talked about on the way home. Now I need to do some of them!

Collaboration. There were some good examples of this in the conference talks but there is a lot of room for improvement in our sector. We could work better together to improve data quality, data flow, data use… don't we all want the same things?!

It would have been good to see even more schemes and societies represented at the conference but a good number were, and the animated coffee break and lunchtime discussions between folk from different areas, representing very different organisations with very different goals, was great to see.

Many attendees identified the opportunity to network as their main reason for attending but it was clear that the excellent and thoughtfully structured programme put together by the NFBR committee (especially Paula Lightfoot and Jodey Peyton) was well-received, and the venue too was very suitable. Special thanks go to the Biological Records Centre for co-hosting the event, and to Field Studies Council for offering bursaries (sadly not all taken up) to encourage attendance by NSS representatives (and to the Yorkshire Naturalists' Union for sponsoring their members' attendance). Our physical audience was expanded online via Twitter (see #NFBR16).

You should certainly try to make it to next year's conference; plans for that are already afoot. Lancaster 2016, like York in 2015, was great, but its true value will probably be in what it leads on to – especially for NFBR's developing links with the Schemes and Societies. I look forward to hearing more about that over the coming months. We hope you'll be able to join us and invite others along as well. And perhaps next year you'll be the one to say ...

Another outstanding conference – amongst the best and most enjoyable I've been to.

(Now go to the NFBR website and work your way through all the presentations!)

Conference workshops

On the first day of the conference a series of workshops explored some of the challenges and opportunities arising from the work of national recording schemes and societies (NSS) and their links to other sectors such as Local Environmental Records Centres (LERCs) and the National Biodiversity Network (NBN). Thanks to all conference delegates for contributing ideas, experience and enthusiasm. Here are some of the main discussion topics to emerge.

Workshop topic: NSS and social media

Facilitator: Matt Smith (Bees, Wasps and Ants Recording Society)

Opportunities

- Crowd sourcing records [see also Jon Chamberlain's talk at the 2015 NFBR/BES conference on crowd sourcing to harvest biological records (PDF download)].
- Photo resources via Flickr.
- Recruiting people to help societies e.g. engaging people with treasurer/secretarial skills.
- A more immediate engagement route, especially with younger people.
- Some practical tips on how to set up group pages on Facebook – group settings are more useful for engagement rather than organisation settings.
- Brilliant results to date through encouraging social media users to add their records to iRecord, e.g. BWARS has received some 8,000 to 14,000 records via this route.

Challenges

- Poor and difficult verification/validation by an already overworked sector of our community.
- Need clarification over permissions from contributors as to how their data will/ might be used. This may result in some people withdrawing their photographs and posts.

Using species data to assess site quality

Facilitators: Jon Webb (Natural England) and David Roy (BRC)

Opportunities

- Favourable results from axiophytes and Ellenberg indicators for plants, and RIVPACS for aquatic system, plus other certain key indicator species.
- RIVPACS is particularly robust with regard to sampling protocols but we need to translate it to terrestrial habitats.
- Species analyses can be combined to produce site scores.

Challenges

- Recorders may be put off by perception of 'dry' scientific/numerical approach?
- How do we know a site is good – what is the benchmark?
- How do we know a site has changed if there is no suitable baseline survey?

Collaboration and data exchange between NSS and LERCs

Facilitators: Martin Harvey (BRC) and Damian McFerran (CEDaR)

Opportunities

- Shared agreement with what data can and should be used for e.g. research, planning, analysis, looking at trends, conservation status and decisions.
- Some functions almost exclusively undertaken by LERCs e.g. local planning.
- Some functions almost exclusively undertaken by NSS e.g. taxonomy and national status.
- Both sides of the equation important, opportunities to work more closely.
- LERCs can offer local services to local recorders – publishing county atlases, digitising data, providing a venue for training courses/meetings etc.
- LERCs can also support NSS to run local training events.

Challenges

- Data flow can be slow as verification takes time.
- Data is not always easy to de-duplicate – but agreed this often matters less than getting the data in in the first place.
- Danger of getting caught up in definitions e.g. how dataflow relates to open data, and what constitutes open data anyway?
- Data should be available for use but time-consuming to ensure this happens consistently and to deal with permissions issues.

NBN data sharing badges

Facilitators: Rachel Stroud (NBN Trust) and Tom Hunt (ALERC)

Opportunities

- Will create clarity to users as to who is sharing their data as part of the NBN.
- Will support data sharing.
- Will raise profile of NBN, which includes everyone involved in the Network.
- Offers people, especially beginners, the assurance that their data is being used.
- Raises awareness and credibility of both the NBN data and the data submission process.

Challenges

- Will need to develop the scheme over time, as, in the first instance the badge will not indicate the quality of the data, or how open the data are.
- Is it really needed – we could be spending time on other resources.

For more background please see associated documents and forum thread.

Does the size of recording schemes matter?

Facilitator: Stuart Roberts (Bees, Wasps and Ants Recording Society)

Opportunities

- Useful definitions of 'big' and 'small' societies or schemes. Big societies are those with employees. Small societies are run entirely on a voluntary basis.
- Anecdotal evidence suggests that a membership of more than around 600 requires professionalization of membership services etc., so capacity-building comes with caveats.
- 'Umbrella organisation' support could be coordinated to sustain social media links, discussion groups etc. Examples where this is already happening include the Dipterists Forum, and Invertebrate Link might be able to offer more.

Challenges

- Small schemes are at risk if the key individuals are no longer available.

Additional discussion topics that came out of the "does size matter" workshop:

Can the schemes and societies that promote biological recording cope with the ever increasing demands placed upon them?

- Yes if they become big, but this is not necessarily what members want.
- Yes if there are not too many taxa and/or records in the group that they cover.
- Yes with infrastructure support e.g. websites, treasurer duties, e.g. mailing lists for recruitment.

Can NSS be too small to survive - or too big to manage?

- No, as long as a small number of taxa, but there is a long term sustainability problem – need recruitment.

How do schemes and societies recruit and retain officers?

- Minimise load on individuals.
- Rotate officers to maximise diversity and succession and security.
- Guidance on roles – each scheme and society needs role definition.

At what stage do schemes feel they need to employ staff?

- We think around 600 members – volunteers will be overburdened with many more than this.
- Treasurer and membership secretaries are the limiting factor and we don't want to overburden them.
- The capacity to handle needs of members needs to increase as they expand.

How should non-scheme members be encouraged to become members?

- Pick up on those that contribute most and invite them.
- Websites need to be attractive as now this is often a first step in looking for information on schemes.

Is there a need for more careful management of expectations among potential data users?

- Yes – small and medium size schemes and societies have to turn away data requests because they are volunteers.
- Could the NFBR have a statement about the size of schemes and gappiness of data and how long data requests can take to process?
- Because most schemes and societies are made of volunteers they cannot apply for grants.

Training and recruitment into recording, especially at expert/verifier level

Plenary discussion

Opportunities

- People are willing to run training courses.
- Training is linked to record generation and quality.
- Research from Lancaster University *Nature – who Knows?* project (PDF download)
- Mentoring new verifiers – a chance for schemes and societies to train up new members to help mentor and support perhaps for the easier groups initially.
- The Field Identification Skills Certificate (FISC) could be adapted for appropriate taxonomic groups – recognition that this needs a certain capacity and is currently only undertaken by the BSBI.
- Professionalising verifiers – we could seek grants to pay them for their services.
- NBN could identify which data sets have a clear validation and verification procedure.

Challenges

- A dearth of verifiers – some used to be paid to have this role as part of their day jobs e.g. museum curators and academics. This whole organism university work and the number of curators are both declining.
- A concern of who verifies the verifiers.
- A time lag on verification.

Bonus marks to the groups who managed to workshop in the sunshine!

Results of NFBR survey of National Schemes and Societies

Steve Prentice

With our diverse membership the NFBR aims to represent the biological recording community as a whole, but historically National Schemes and Societies (NSS) have only had a small representation within the NFBR membership. The 2016 conference was intended to help redress the balance. To help achieve this, we were keen to find out more about how the organisers of recording schemes and societies perceive some of the current issues in biological recording, and how best the NFBR could in future represent their views, so in advance of the conference we circulated a questionnaire to representatives of the NSS.

The survey was sent to around 80 NSS coordinators of whom 37 responded, a good response rate of 46%. This article summarises the responses (giving the actual number of responses to each question as not everyone answered all the questions). The full results can be downloaded from the NFBR website (PDF download).

The first questions were about the individual answering the survey and the NSS that they represented. Responses came from large and small schemes and both new and old. Scheme sizes ranged from 'one man bands' to those with hundreds of recorders. The earliest scheme was founded in 1876 and the latest started in 2015.

Next we asked how much the respondent knew about NFBR, whether they were a member and whether they had attended an NFBR Conference. The majority had heard of the NFBR but only 10 out of the 37 respondents are individual members and only 4 represented organisation members. This highlighted an underrepresentation of schemes and societies in the NFBR.

The next questions established how many respondents shared data with the NBN and Local Environmental Records Centres: 24 shared records with the NBN, and 18 with LERCs. It was interesting to note that a majority of respondents (23) accepted records submitted online – even five years ago this number would have been much smaller.

We asked how important it is that NSS records are used for: Conservation, research, planning plus informing & inspiring others. Conservation and research were noted as being very important by 36 out of 37 respondents. Only 6 thought planning was very important but 20 thought it important whilst there was an equal split (16 & 16) for informing and inspiring others.

The next section covered representation of NSS and how the NFBR could be of assistance. 25 thought it would be good for NSS to have a way of making a collective response to government consultations and other major projects, perhaps reflecting the time and effort required for such responses on an individual basis. About half of the respondents (18 people) thought NFBR could represent the collective views of national schemes and societies. If there are issues affecting all schemes and societies then the NFBR could be well placed to perform this role. Only 2 respondents thought that it is not realistic to expect so diverse a group as NSS to have a collective voice.

Asked what NFBR could actually do to represent and support NSS, the highest response (26) was 'seek input from NSS when drafting a consultation response' followed by 'Collaborate with NSS to organise events, e.g. conference, workshops, field meetings' (21). 'Ensure that NSS are represented on the NFBR Advisory Council' and 'Invite NSS to contribute to the NFBR newsletter and/or website' had 20 responses each. 'Enthuse more NSS to become organisational members of NFBR' and 'Facilitate communication between NSS e.g. by setting up an email group or forum' had 19

'Wordle' analysis of comments provided in response to the questionnaire.

responses. Overall it would appear that the NFBR could help schemes and societies with issues above and beyond their normal day to day tasks.

The final section of the survey was about the current issues in biological recording. The majority of respondents agreed that data quality and verification were most important. Resourcing and support came second although this could cover a multitude of activities. Skill development in biological recording and species identification were also deemed important as this naturally follows on from the perennial question of where do we get the next generation of enthusiasts and recorders? Effective use of resources (financial and human) in biological recording was highlighted. Other recurring issues of dataflow, data access and data use were noted to be of importance.

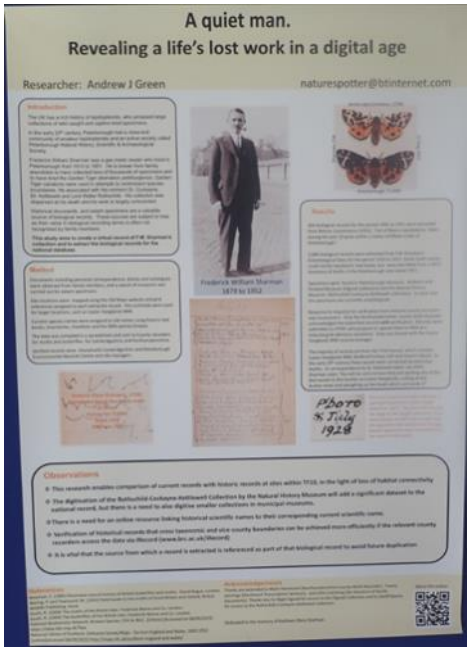
Some additional comments were provided, including:

> "Insufficient capacity to deal with demand - we have expanded the team but all are overstretched."
>
> "Data flow – a better system is needed for LERCs to receive records from NSS. It's easy enough for local schemes and societies to pass their records on to LERCs but not for volunteer-led national ones."
>
> "I think it is important to gather knowledge, in this case distribution knowledge, about living things in the UK. This has obvious uses around planning, BAPs, climate change etc."
>
> "I see the role of the NFBR as a higher-level campaigning organisation, which could focus on promoting biological recording and its achievements."
>
> "The NBN is biased to collecting/managing data. The NFBR has a niche in focussing more on the biology and the contribution that distribution information has to the knowledge of species."

After the presentation the discussion was opened to the floor, and one message that came through strongly was that NFBR, BRC and NBN can all offer support to NSS but must work together, emphasising each other's strengths but avoiding unnecessary overlaps.

NFBR conference 2016: final plenary discussion

Our conference ended with a lively and wide-ranging discussion. Darwyn Sumner got things going by asking about support for Recorder 6. Support from government was no longer available but he felt it important that Recorder survives. ALERC has been pursuing this issue but have found it difficult to get information. There are also concerns over MapMate, with some users experiencing problems when moving to the latest versions of Windows. A comprehensive solution is needed, not tied to particular software packages. Implementing standards is more important than particular software implementations, but existing standards are not always followed. The NBN data flow group was asked if this could fall within their remit to suggest ways forward.



From the NFBR questionnaire to national schemes and societies (NSS), a question was raised as to how far the received responses could be seen as representing NSS as a whole. Although a high rate of responses was received, inevitably it could not be guaranteed that the views of those who did not respond could be deduced from those who did. It was proposed that a further round of communication with all NSS be undertaken to encourage further input from those who had not been involved so far. This would also assist NFBR to develop an ongoing relationship with the schemes.

Discussion then moved to ways in which NSS might 'build capacity' to continue what they are doing and perhaps take on new ideas and projects. This covered how to find 'back-office' skills as well as natural history and taxonomic skills, in order to assist societies with the whole range of tasks that are needed. Many societies have had difficulty in recruiting key positions such as treasurer or secretary; ideas put forward in discussion included:

- Can NBN and/or NFBR provide any 'back-office' skills or support?
- Can online tools assist with administrative tasks, or even make some tasks unnecessary?
- Are there sources of relevant skills that are not being tapped into, e.g. could societies provide experience for, and benefit from, accountancy students?

Related to this was the idea of sharing advice and best-practice, covering standard questions such as “what is a record” and standard tasks such as a model letter for use when seeking permission to visit a site for recording purposes. There could be a role here for crowd-sourcing among the biological recording community, and sharing good examples via a wiki-type website.

For the future, it was suggested that NSS could work more closely with NFBR to target limited resources more effectively, focusing on how NFBR could achieve outcomes for NSS by working with other partners. The biological recording community provides a tremendous resource that forms a large part of our natural heritage, and we need to build a larger partnership to influence government and ensure support for the future. Within the community there is still some confusion over the roles and relationships of organisations such as NFBR, NBN, BRC and ALERC and how NSS can work effectively with them, while keeping in touch with the recorders on the ground who provide the bedrock of biological recording activity. NFBR’s independent voice is seen as a valuable asset – to make the most of this we need to ensure we consult widely, target action to achieve positive outcomes, and aim high!

Illustrated with a selection of the conference displays

The bountiful beauty of Bowland: NFBR conference field trip 2016

Rich Burkmar

The 2016 NFBR conference field trip was a special one for me because it was 10 years since I'd done any recording in the Forest of Bowland and our guide for the day was the very person who introduced me to Bowland in the first place – Jon Hickling.

Green Tiger Beetle. Photo by Steve Whitbread.

On his retirement from NE two years ago, Jon had spent 38 years, man and boy, working for the national conservation agency; the last 26 years of those as their 'man on the ground' in Bowland (amongst other places). (Steve Murphy – NE's Hen Harrier Officer – organised the field day for us but was sadly unable to attend due to a family bereavement.)

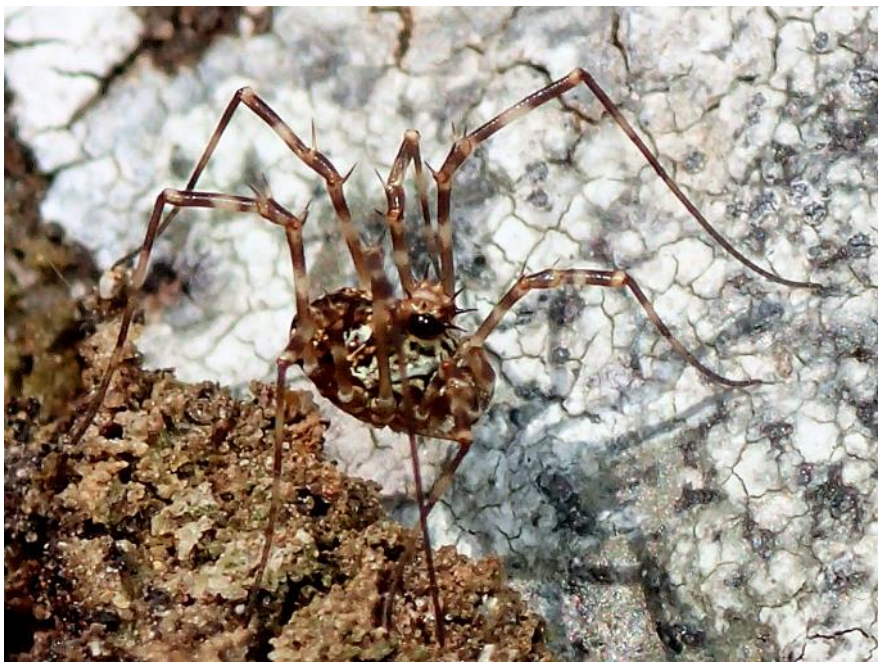
Finding the meeting point at Cross of Greet in the Hodder Valley was perhaps the greatest technical challenge of the day! Nevertheless a small but hardy group of nine assembled (one or two others may still be lost in the Trough of Bowland somewhere) and after a comprehensive introduction from Jon to the geography, ecology and conservation issues of the area, we headed into the hills.

In her account of the 2015 field trip to Hatfield Moors, Sally Hyslop wrote *"[…] our guides quickly spotted a basking female Adder! We soon came across more agile hunters, with Green Tiger Beetles (Cicindela campestris) and wolf spiders in abundance.*"

Photo by Steve Whitbread.

That we also encountered these species on the moorland of Bowland hints at some of the ecological similarities between the two sites. In other ways, they were very different, notably in altitude! A highlight for many of us was the Bilberry Bumblebee (*Bombus monticola*) – a species closely associated with higher altitudes. It is certainly the most beautiful bumblebee in the UK (in my opinion!).

In 26 years working in Bowland, Jon Hickling had only seen Adders there once. Steve Murphy had told us there was a chance of finding them in this area and there was excitement at the cry of "Adder!" from Dave Slade. It disappeared into bracken before the rest of us got there. But I didn't have to see it to feel the thrill of being in the same place at the same time as



Harvestman *Megabunus diadema*. Photo by Paula Lightfoot.

the UK's only venomous and, of course, most beautiful snake.

We were all delighted by a large Rove Beetle that none of us had seen before – *Staphylinus erythropterus* – with copper-coloured elytra and gold-spotted abdomen. I swear to you: it is the most beautiful Rove Beetle I've ever seen! Other delights, as we descended the Hodder Valley on our way back to Cross of Greet, included the Green Tiger Beetles (surely one of our most stunning beetles) and, a highlight of the day for many, the superb little harvestman *Megabunus diadema*, found by Paula Lightfoot; its contrasting red, black and silver markings and outrageous 'crown of thorns' make it the outright winner in the UK harvestman beauty stakes. Paula also found the gorgeous wolf spider *Allopecosa pulverulenta* which has always been near the top of my beautiful Wolf Spiders list.

That was a tiny fraction of the invertebrates we found. Andy Musgrove expects to add another 40 plus invertebrates to his list for the day by the time he's through with his specimens. We also saw a number of lovely plants including Round-leaved Sundew, Marsh Violet, Water-crowfoot (of some kind!) and more – all ably and systematically recorded by Jeremy Ison. No Hen Harrier sadly, but Curlew, Lapwing, Cuckoos (two), Whinchat, Stonechat, Grey Wagtail and Dipper (glimpsed) were among the birds encountered. I don't really need to argue the case for the beauty of birds like these, but I can't resist promoting a favourite of mine – the Meadow Pipit – surely one of the sweetest and beautiful LBJs there is!

Water-crowfoot (and attending Diptera species!). Photo by Paula Lightfoot.

Beauty, they say, is in the eye of the beholder and when the eye beholds Bowland, beauty is never far away. The 2016 NFBR conference was one of the most interesting conferences that I've ever attended (all the more so for the occasional controversy!), but after a couple of days immersed in the more difficult issues around biological recording, the conference field trip reminded us that biological recording is, at its heart, a beautifully simple pleasure; especially so when shared with friends.

News from ALERC

compiled by Tom Hunt

By the time this the newsletter goes out, ALERC will have started renewing annual memberships. The cost has increased, but this is part of a programme of incremental cost increases to ensure that ALERC can continually support a member of staff.

This is the first newsletter since the Natural England (NE) discontinued their annual Memorandum of Agreement with LERCs. A lot has been said and written about this, particularly on the NFBR Facebook page. I don't want to go over any of this again, except to say that I was struck by the amount of vocal support from recorders for their LERCs. Therefore, I just wanted to thank NFBR members formally for their support at a difficult time. ALERC will continue to try and deal with questions that the MoA cancellation raised, with the hope that a progressive and mutually beneficial relationship with NE can be restored.

Accreditation is now gathering pace, which is excellent news for ALERC. So far this year, HBIC (Hampshire), ERCCIS (Cornwall) and GiGL (London) have all be accredited, with more to follow. LERC (Lincolnshire) have been reaccredited as it is five years since they first passed the criteria as part of the pilot project. Please visit the accreditation page on the ALERC website for more detail.

Survey of LERC services to recorders

The final deliverable from the now defunct memorandum of agreement between NE and LERCs in England was for LERCs to report on the services they provide to recorders in their area. These are the services that are provided free of charge to local recording communities that help them continually create more and better biodiversity data, as well helping them get more out of the records they have already created. The reports have been made available to ALERC and I thought NFBR members might like to read a summary of what they contained.

Training course for volunteer recorders – training provided by Hoverfly Recording Scheme, event organised by Buckinghamshire and Milton Keynes Environmental Records Centre

LERCs were invited either to complete an online survey, or submit 500 words to NE describing what they do specific to their area that aids local recorders. The submissions described a large variety of different services and seem to roughly fit into several categories; administrative, networking, training, data management and provision of resources.

Administrative services are seem to be provided

by pretty much every LERC and the range of services offered is very variable. It would be easy to see these as menial tasks, but reading through the submissions from LERCs I can see that a how important they actually are. For example printing leaflets for a recording event or producing maps to help recorders produce atlases or to guide their future recording efforts are things that volunteers may not be able to do themselves very easily. Arranging access to land for recorders is another key task that it would be hard for volunteers to do themselves, especially where several phone calls or letters are required, as is often the case.

The networking aspect of LERCs is a clearly something that many recorders will rely on in order to keep in touch with each other and abreast of what is going on in their locality. What interested me about results of this survey was that despite the rise of new technology and internet, this has not replaced the traditional forms of networking. As you might expect, several LERCs do operate social media accounts, but several of them also use the more methods of networking such as newsletters, and simply forwarding enquiries on to the correct person such as a county recorder or local species expert.

Training courses are numerous and wide ranging and are a big part of what recorders can get out of their LERC. You can see by the accompanying Wordle how many times training was mentioned in the survey. Looking at the survey in more detail, what's interesting is whilst many training events are field based, such as identification workshops or survey techniques, there is also a lot of IT training such as online recording training (see how large "online" features in the Wordle.

Data management services are perhaps seen by many as the mainstay of LERC work, but hopefully what this article has already shown is that they are far from everything. What was interesting from the survey was that the data management that is done for recorders is different in different areas, reflecting the differing needs of local recorders.

For example some LERCs validate data (e.g. check grid references) before passing it on to county recorders for verification, whilst others receive the data from a local natural history group already verified. In these areas the LERC's job could be to allow the group to access it, along with other data, on the NBN Gateway.

The final group of services I identified from the survey was the provision of resources. These could be physical in terms of field equipment, microscopes, libraries and even laboratories, or financial in terms of a fund for local recorders. I am not sure exactly how many LERCs across the UK do offer funds for recorders, but it is something ALERC could investigate in the future.

LERCs forge into new habitat recording territory

Mark Wills, Ecological information Officer,
North & East Yorkshire Ecological Data Centre

We at NEYEDC have been fortunate enough to benefit from an 'Innovation grant', awarded by North York Moors National Park Authority. Our funding bid was based around the purchase of an eBee 'drone' or Unmanned Aerial System (UAS) to give it its official title, to be used to capture aerial photography data which could be analysed and segmented to give a preliminary habitat classification for each polygon. This data can then be assessed for correctness and ground-truthed, and the system then learns and improves its analysis based on the feedback provided.

This methodology is hoped to improve the efficiency of habitat data capture and fits into a hierarchy of associated techniques known as the Crick Framework, which was developed during the Making Earth Observation Work (MEOW) habitat mapping project (further information available on the JNCC website). This framework suggests that habitats should be monitored in the most cost-effective way using the most suitable surveillance technique, ranging from satellite data and traditional aerial photography through to UAS captured data and on the ground surveying. In a separate project, Norfolk Biodiversity Information Service (NBIS) have recently been involved in exploring the potential for volunteers and communities to become habitat data validators, and the potential for open source technology to support it.

Consequently, the valuable expertise of the on-the-ground surveyor can be focused to where it is needed most, in surveying those habitat types which are difficult to identify from remote sensing, and targeting priority habitats and high-priority gaps in habitat surveillance. It makes best use of that most scarce of species – the specialist habitat surveyor – but it isn't without difficulties of its own.

eBee drone from senseFly.

The methodology is not yet well-defined so there is an element of trial and error involved and the computing power needed to process the images the eBee captures can require the sorts of processor speed and graphics capabilities not normally found on your average laptop or desktop.

As the focus begins to move from capturing purely the extent of habitats towards capturing the condition of habitats, the role of the LERC and the surveyors needs to adapt in order utilise the opportunities that remote sensing can offer, rather than see it as a threat to their traditional activities. There are many instances where remote sensing won't be able to replace the skills of the on-the-ground surveyor and approached in the right way, will in fact enhance the standing of biological recorders and should make their skills even more invaluable.

You can read more about some of the challenges we faced in trying to get our drone off the ground (excuse the pun) in an article by Paula Lightfoot on page 31 of this newsletter.

BioLinks: supporting biological recorder development

Keiron Brown (@KeironDBrown), Field Studies Council

It's often reported that field and identification skills are in decline and there is concern that student biologists are no longer taught these essential skills in enough detail on zoology and ecology degrees. It is often volunteer-led organisations (such as national recording schemes and societies) or time-limited projects that provide training in these areas to biological recorders.

BioLinks is an upcoming Field Studies Council project aiming to strengthen the biological recording networks of the West Midlands and South East England. The project ethos will be to work alongside existing schemes, organisations and projects to develop biological recorder skills in these areas. The project is currently in the development phase so public consultations are being run throughout the summer of 2016 to determine what activities should be delivered to maximise the skill development of participants. This has included discussing the importance of field events, technology, social media, reference collections and, of course, training course provision.

In order to ensure that BioLinks provides the best quality training, an online survey has been devised to question volunteers and professionals about which focus species groups they'd like to see more identification courses on and what type of content and post-course support is essential for biological recorder development. In addition, the surveys asks if respondents prefer stand-alone courses or residential courses, or would volunteers like to sign up to a series of courses that develops their skills over time. The results of the survey will not only inform this project, but will be summarised in a report that will be made publicly available so that other organisations and projects can benefit from the dataset.

The survey has already had 250+ responses, but the more the better! This is a national survey so it doesn't matter if respondents reside within the BioLinks project areas so please fill it in online if you would like to contribute to this dataset.

- BioLinks Online Survey: http://goo.gl/forms/GBzmIQYT0k
- BioLinks project webpage: www.field-studies-council.org/about/fsc-projects/current-projects/biolinks.aspx

FSC Bringing Environmental Understanding To All

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Natural Talent Traineeships

Ryan Clark (@RyanClarkNature), Natural Talent Entomology Trainee

What is Natural Talent?

Natural Talent traineeships address the skills gap in taxonomy in Britain, highlighted by the Chartered Institute of Ecology and Environmental Management (CIEEM), through a series of traineeships. These traineeships are run by The Conservation Volunteers (TCV) and there have been over 50 traineeships to date, initially funded by the Heritage Lottery Project, and now Esmée Fairbairn.

These traineeships focus on lesser known species groups and the habitats that support them and offer trainees a chance to become an expert in a specific taxonomic group, habitat or a mixture of both, based with a placement provider outside of TCV. Therefore the benefits to trainees are huge, but also so are the benefits to placement providers who can help train future conservationists and have the resource to do things that they normally wouldn't have the time to do. Trainees also work with people in local areas through TCV and increase the capacity of volunteers and communities to play an active role in surveying, mapping and management to increase the biodiversity value of local sites.

Setting vane traps at Bleinheim Park. (All photos by Ryan Clark.)

My background

I have been an active biological recorder for a number of years now, mainly teaching myself species identification skills in a number of taxonomic groups. I am also passionate about getting other young people involved in biological recording. I spoke about this at last year's NBN conference and now sit on the committee of A Focus On Nature, an organisation that brings together young people interested in wildlife and encourage young people to get interested in biological recording in this way. Previous to this role I was doing local authority ecology work for my local county council, however I have always wanted to develop my invertebrate and engagement skills further. I was looking for a job change and came across an advert for the Natural Talent traineeships. The opportunity to work for Natural England and Buglife was too good to miss! I felt very lucky to be offered the position and still feel lucky now to be doing this traineeship.

Dead-wood click beetle, *Ampedus* species.

Projects in progress

In order to increase my taxonomic knowledge, I have devised two projects with the help of my supervisors. One of my main projects is looking at surveying the saproxylic (dead wood dependant) beetles found within Blenheim Park SSSI, within the grounds of Blenheim Palace in Oxfordshire. The area I am focusing on is an area of pasture woodland which is dominated

Ground beetle Chlaenius nigricornis from Woodwalton Fen.

by hundreds of veteran oak trees, which must support hundreds of species dependant on these trees, but very little work has been done on this at the site. Therefore I am surveying the site's beetles using a variety of methods and get to spend lots of time in this amazing place. My main survey method is using vane and bottle traps but I am also using hand searching, beating, bone traps and hogweed lures to increase the number of species that I record. This will then go onto inform management on the site. Although my surveying will go on into the autumn, already I am finding a variety of interesting species such as *Procraerus tibialis*, a widespread but rare click beetle, and *Ischnomera sanguinicollis*, a Nationally Scarce species of false blister beetle.

My other project is at Woodwalton Fen National Nature Reserve in Cambridgeshire. This site is spectacular and is a relic of what used to be a much larger landscape of fenland before they were drained for agriculture. The Great Fen Project aims to restore a much larger area of connected fenland in the area. I wanted to do a project on ground beetles and thought about doing it in the fens as it is close to where I am now based in Peterborough. The Natural England team at Woodwalton Fen NNR were enthusiastic about me carrying out some surveys there and looking at the beetles on their site. Specifically I am looking at the ground and rove beetle assemblages in three areas of reed bed, which have different cutting regimes, using pitfall traps. So far I haven't found any new species to the site but have found some rather rare ground beetles in numbers, such as *Oodes helopioides*, where only one individual has been found before, so my work is allowing the rarer species to be mapped on the site.

A pool at Woodwalton Fen.

There are five other traineeships this year, and each of them is very different. Imogen Cavadino is based at the National Museum Wales in Cardiff. Her main project is surveying reserves within the three Gwent Wildlife Trust's "Living Landscape" areas for molluscs: the Gwent Levels, Eastern Valleys and Usk to Wye. Katherine Whyte's traineeship is all about saline lagoons: semi-enclosed bodies of water that are partially separated from the nearby sea. She is based in Edinburgh at National Museums Scotland and is learning about the wildlife found in these amazing habitats. Lorna Blackmore's traineeship 'Pollinators of Created Meadows' focuses on learning identification skills and raising the profile of lesser-known pollinating insects and is based at World Museum, National Museums Liverpool. Rebecca Cairns is on placement with SASA (Science and Advice for Scottish Agriculture) based in Edinburgh. Rebecca's traineeship is an entomology post focusing on insect crop pests such as aphids and psyllids. Eleanor Lewis is based at CEDaR, the local records centre for Northern Ireland and specialises in invasive non-native species (INNS). Working closely with the Environment Agency she covers all aspects of INNS

management from legislation and policy through to surveying, writing management plans and carrying out clearance.

Skills learnt

All these traineeships have biological recording at their core, and species identification of difficult groups is a big part of this. I am amazed at some of the methods used for identifying species. For example Katherine has to identify some isopods by how hairy their legs are, which is all very well until you realise that the species are 3mm long. Lorna is looking at some less well-known pollinator species that use created meadows around Liverpool which is rather exciting. We are also involved at the cutting edge of species identification by looking at how DNA can be used to identify species such as the aphids that Rebecca is looking at.

However DNA doesn't replace traditional taxonomy and species identification using keys, and the preparation of voucher material is also a big part of many of the traineeships. I have pinned insects before, but have avoided carding until now – I get better each day! Many of my fellow trainees are also based in museums so are learning about curation there and leaving the specimens from their projects there, what a legacy! The data we collect is much more useful if more people know about it though, so not only are we analysing the data for ourselves, we are writing reports to send to landowners and making sure that the records get to the appropriate local records centres and national recording schemes.

Engagement and communications skills are also essential to all of the traineeships this year. We all blog and tweet regularly in order to raise awareness of less well known species and habitats. We also engage with volunteers from local TCV groups and the public in general at events. For example the majority of Eleanor's work on invasive species is about informing the public about how to identify and record invasive species and improve biosecurity practices. Lorna is educating the public on how they can support pollinators in their gardens. For me this traineeship is improving my confidence in engaging with the public. Imogen is engaging with the public and getting them to love slugs and snails, an often unloved group.

The future

Although the Natural Talent scheme has been addressing the skills gaps in taxonomy as best it can, the schemes funding comes to an end this year. With nearly 500 applications for the 6 posts this year, there are still lots of people keen to take part in traineeships like this and TCV are hoping to extend the programme with new partners and funders in the future.

Summary

In summary, the first half of my year long traineeship has been great and I have learnt an incredible amount. I am very thankful for TCV, Natural England and Buglife for this opportunity and to Esmée Fairbairn for funding my traineeship. I can't wait to see what the next six months will be like for me. To keep up to date with my traineeship and others, why not follow @Natural_Talent and @RyanClarkNature on Twitter, and visit the Natural Talent Blog.

Recording scheme news

Micro-moths and the National Moth Recording Scheme

Zoë Randle, Butterfly Conservation

Micropterix aureatella. Photo by Patrick Clement.

Butterfly Conservation's National Moth Recording Scheme (NMRS) is now accepting verified micro-moth records. This exciting development has followed several years of consultation with the key micro-moth experts and the National Taxa Schemes who were unanimously supportive in Butterfly Conservation taking the lead in this venture.

The timing is appropriate due to the increasing interest in micro-moths and the publication of field guides which has made the recording of these fascinating insects more accessible.

As with any recording scheme data quality is paramount and although some species of micro-moth are easy to recognise, for example Small Magpie *Anania hortulata* and Mother of Pearl *Pleuroptya ruralis*, many others pose a significant identification challenge. For this reason, and to support County Moth Recorders with the verification process where required, Regional Verification Panels have been set up. A National Verification Panel has also been established to support the Regional Verification Panels. In addition to these new panels, guidance notes to help with micro-moth verification have been drawn up, including a species grading system. The purpose of these documents is to ensure that the verification process runs smoothly and that recorders are aware of the possibility of their records being questioned or requiring further evidence to substantiate them.

With the exception of the possibility of greater scrutiny of records, nothing will change for moth recorders 'on the ground' who are simply required to continue to submit their records to their County Moth Recorder for incorporation into local datasets and ultimately the NMRS. We are extremely excited to be pushing forward with a scheme that includes micro-moths; it is something that many moth recorders wanted from the outset of the NMRS, will support the conservation of threatened micro-moths and, in due course, will enable the calculation of distribution trends.

Further details, including the verification guidance notes and species grading notes can be found on the Moths Count website: www.mothscount.org.

Acknowledgements
A considerable amount of thought and effort has gone into bringing this development to fruition. Butterfly Conservation is extremely grateful to the National Taxa Scheme organisers for their support and to John Langmaid, Steve Palmer and Mark Young in particular for their collation of the verification guidance notes and for providing specialist advice and expertise. We are also wish to thank the moth recording community and County Moth Recorder network for their continued support of the NMRS.

Countdown to the Macro-moth Atlas
In collaboration with MothsIreland we are currently working towards the first ever atlas of Britain and Ireland's macro-moths. The atlas will be published in 2018 and will include moth records up to 31st December 2016. We are therefore halfway through the final year of possible fieldwork for moth records to be collected for inclusion in the atlas. To ensure that your moth records make it into the Atlas and the NMRS please submit them to your County Moth Recorder – a list can be found here.

New recording schemes and scheme organisers

Change is afoot in the world of national recording schemes, with a number of new schemes coming into existence, while there have been changes in personnel for some of the existing schemes. The full list of schemes and contact details are available on the Biological Records Centre website, and here are the latest changes.

New national recording schemes:

- Weevil and Bark Beetle Recording Scheme – organisers Adrian Fowles, Mark Gurney and Colin Campbell (this new scheme incorporates the previous separate schemes for Orthocerous Weevils and Bark Beetles)
- Histeridae and Sphaeritidae (Clown Beetles) Recording Scheme – organiser Steve Lane
- Silphidae Recording Scheme (carrion, burying and sexton beetles & relatives) – organisers Ashleigh Whiffin, Matthew Esh and Richard Wright
- Acari Recording Scheme (focus on soil-dwelling mites: Sarcoptiformes, Trombidiformes and Mesostigmata) – organiser Matthew Shepherd

The weevil *Dorytomus longimanus*. Photo by Mark Gurney (this and many other weevil photos can be seen on Mark's Flickr pages).

Changes in scheme organisers:

- Longhorn Beetle Recording Scheme (Cermabycidae): new organisers Katy Potts and Wil Heeney, taking over from Martin Rejzek and Peter Hodge
- Siphonaptera (Flea) Recording Scheme – new organiser Simon Horsnall, restarting the scheme previously run by the late Bob George

Many thanks to all scheme organisers, whether new, retiring, or carrying on, for all the work they do to support biological recording.

New Atlas of grasshoppers, crickets & co - call for records

Björn Beckmann, Biological Records Centre

The Grasshoppers and Related Insects Recording Scheme of Britain and Ireland (www.orthoptera.org.uk) is working towards a new atlas. A big thank you to all who have sent in their observations already – please continue to do so, and spread the word! There are two more years to contribute sightings, up to the end of 2017, with publication of the new atlas in 2018 to coincide with the 50th anniversary of the recording scheme.

Field Grasshopper *Chorthippus brunneus.*
Photo by Katie Beckmann.

The new mobile app "iRecord Grasshoppers" helps to identify species and their calls, and to log records on the go. It is free and available for Android and Apple devices. An exciting update to the app is in preparation, which includes a "bat detector" function and allows making sound recordings and attaching them to records.

You can also enter records online via iRecord or the recording scheme website, or send them in via your county recorder, Local Environmental Records Centre or to the email or post address below.

Free guides to common species are available for download, and there are a number of training courses still to come during 2016 – see the list on the website forum.

Provisional draft atlas maps are attached to the Spring 2013 scheme newsletter. The maps illustrate some of the dramatic changes affecting species, and we hope will inspire you to fill gaps in recording.

Contact details:
Björn Beckmann and Peter Sutton
c/o Biological Records Centre, Centre for Ecology & Hydrology,
Wallingford, OX10 8BB

email: orthoptera@ceh.ac.uk – phone: 01491 692564 – web: www.orthoptera.org.uk

New list of rare and scarce mosses and liverworts

Data held by the British Bryological Society has been analysed to produce an updated list of rare and scarce bryophytes:

- Pescott, O. 2016. Revised lists of nationally rare and scarce bryophytes for Britain. *Field Bryology* 115: 22–30.

This is an analysis of rarity, not threat, based on distribution data rather than IUCN threat criteria. Alien species are included, Changes in species status from previous lists reflect genuine change in species distribution in some cases, with some species declining and some increasing. Other changes are a result of variation in recording effort, or taxonomic change resulting in species being split or otherwise interpreted differently. Six species have not been recorded at all since 1970.

The new lists have been used to contribute to a review of bryophytes on SSSIs and will be useful for site assessment and for targeting recording. Oli Pescott's Field Bryology article and a spreadsheet list of the species are available from the BBS website.

Thanks to all who contribute records to the BBS database, and thus enable such analysis to be undertaken.

NFBR news

As you will have seen earlier in the newsletter, a lot of effort goes in to organising each year's annual conference, and with the 2016 conference now a pleasant memory thoughts are turning to plans for next year. The conference included NFBR's 2016 Annual General Meeting, held at 12.45pm on 13th May 2016 at Lancaster University, and attended by 28 members. The standard business was completed, accounts agreed, Council and Executive members confirmed, retiring members thanked and new members welcomed, and the next year's priorities set out.

NFBR has been busy with other activities as well, some of which are highlighted here.

Welcome to the new members of NFBR's advisory council

We are pleased to welcome three new recruits to our advisory council, all of whom bring a great deal of relevant experience and expertise. Further information and details of all other NFBR officers and councils members can be seen on the website.

Zoë Randle

I work for Butterfly Conservation and co-ordinate the National Moth Recording Scheme and Wider Countryside Butterfly Survey. My key role is to provide support and feedback to the moth and butterfly recording community. I also promote moths, butterflies and the recording of these insects to the wider world. I have a PhD and my research focussed on the role of *Myrmica* ants in Large Blue Butterfly habitats and the benefits to other rare species.

Prior to working for Butterfly Conservation I was employed by the NERC Centre for Ecology and Hydrology in Dorset. I was involved in a variety of projects including studies of Oak Gall wasps and their parasitoids; Large Blue Butterflies and *Myrmica* ants, the Farm Scale Evaluations of Genetically Modified Crops and Countryside Survey 2000. I also spent 6 months in the Caribbean educating school children about sea turtles and coral reefs.

(See also Zoë's article on page 25 of this newsletter.)

Maria Longley

I have a keen interest in urban wildlife and how humans and wildlife share spaces, especially after nearly a decade of living in London. I moved here after a degree in marine biology took me to Swansea, Wales. I have been with Greenspace Information for Greater London CIC (GiGL) since 2009 and now work with community groups to support recording and data flow. Prior to GiGL I worked doing environmental conservation and education as a youth worker and with adults with learning disabilities.

Teresa Frost

As with many recorders, my love of nature has been with me since childhood and began with birdwatching; in more recent years I've been attempting to learn to record some invertebrates such as moths, hoverflies, and bees.

I have worked in Local Environmental Records Centres, first as Data Manager at Kent & Medway Biological Records Centre and then as Manager establishing Cumbria

Biodiversity Data Centre in the opposite corner of England. As this was housed at Carlisle's Tullie House Museum, I had the added opportunity to appreciate first-hand the vital support local museum natural history departments give to recorders.

In November 2015 I joined the British Trust for Ornithology as the BTO/RSPB/JNCC Wetland Bird Survey (WeBS) National Organiser. WeBS is one of the longest running biodiversity monitoring schemes in the world and relies on thousands of skilled counters and a network of volunteer local organisers to collect monthly data on non-breeding waterbirds at coastal and inland sites.

My experience from sitting on the boards of the Association of Local Environmental Records Centres and the National Biodiversity Network Trust and the Council of Carlisle Natural History Society has helped me understand the ways biological recording is organised in this country at national and local levels. I'm continually astonished by the expertise and dedication of the naturalist community and the voluntary recording and monitoring work they do.

NFBR liaison

NFBR is represented on a number of working groups and other bodies, where we play a role in representing the wider biological recording community and promoting best practice, alongside others working in this area. Currently we are providing input to the following groups:

- NBN Board of Trustees (NRBF rep is Alan Stewart)
- NBN Captivating and Engaging People Working Group (Graham Walley, joint lead)
- NBN Data Flow Working Group (Simon Pickles)
- NBN Online Recording Working Group (Paula Lightfoot)
- NBN Verification Working Group (Paula Lightfoot, Rich Burkmar)
- State of Nature Partnership (Graham Walley; thanks to Steve Whitbread for previously carrying out this role)
- Biodiversity Data Users Group (Martin Harvey/Jodey Peyton; thanks to Trevor James and Steve Whitbread for previously carrying out this role)
- Linnean Society Taxonomy and Systematics Committee (formerly Trevor James, currently vacant)

It is likely that some of the above NBN working groups will become combined in future.

NFBR (Graham Walley) has also attended the All Party Parliamentary Group on Biodiversity, but we've just heard that this has been disbanded. It started in January 2012 and met eight or nine times a year to consider over 30 specific biodiversity topics. These included 'Understanding Natural Capital', the 'Global importance of the biodiversity of the UK Overseas Territories', 'Climate change and Biodiversity' and 'Ecological Capacity in Local Authorities' amongst others. The arrangement allowed MPs to question concerned organisations and individuals who had asked for an opportunity to comment or deliver a short summary of facts as they saw them. And the 'All Party' nature of the group tended to encourage a non-political ethos. The group will be missed by the biodiversity world and it is to be hoped that a replacement will be found to be necessary at the earliest time.

If you want to know more or become more directly involved in any of these groups please get in touch with NFBR via any of our council members.

NFBR membership news

Membership of NFBR is currently on the increase and stands at 185 members, with 22 newly joined in 2015 and 35 (so far!) in 2016. The increase is very pleasing, but it would be fantastic to have even more members! NFBR is an entirely voluntary organisation and charity, and depends on the support of its members to enable it to remain active and to adequately represent a wide section of the biological recording community. Thanks to everyone who has joined so far, and please do spread the word!

Our treasurer and membership secretary Clare Langrick has been contacting new members to find out more about how they view NFBR, and here is her summary of some of the feedback she has received.

All new members from 2015 and 2016 were sent a brief, three question survey. Responses have been very positive, with over half of the new member intake having replied.

1. How did you/your organisation find out about NFBR?
The single biggest source has been via the Manchester Metropolitan University biological recording courses (so a big thank you to Sarah Whild who is personally mentioned many times!). There have also been several respondents who have joined after following NFBR on social media.

2. What are your organisation's biological recording interests / taxonomic group interests? Do you cover a wide variety of taxa, or do you have specialists that concentrate on certain fields?
As expected, responses cover a wide range of taxonomic groups, from very specific, more unusual groups to pan-listers and others with a more general interest. Vascular plants is the most frequently mentioned group.

3. Is there anything you/your organisation would like to get out of being an NFBR member? Can NFBR do anything for you/your organisation?
Levels of detail vary, and this one has been interesting to gauge how people view NFBR from the outside. Key themes are: training opportunities (both formal and informal), keeping up to date with new technologies (QGIS is specifically mentioned several times), networking with other like-minded people (both through the conference and social media) and data exchange with LERCs and NBN Gateway.

Here are a few quotes:
"Useful to have closer links with national bodies"
"Anything NFBR can do to help simplify the process of getting data from the field to the records centres would be very beneficial"
"A useful body to exist to promote dialogue and joint working"
"I believe there is a place for the NFBR but I think it needs to be clearer to the recording community what the role of NFBR is and how it will achieve it"

If any other members, new or old, wish to respond they can send an email to Clare at: membership@nfbr.org.uk

Habitat mapping on a wing and a prayer

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Come fly with me, let's fly, let's fly away –
If you could use some exotic booze, there's a bar in Runswick Bay!

Sounds idyllic doesn't it? As part of my PhD research on mapping marine habitats from remote sensing data, I spent several days last year using a drone to collect high resolution aerial imagery of the intertidal zone on Yorkshire shores. I was warned it wouldn't be easy – the drone could face dangers ranging from cliff-induced turbulence and downdrafts to being mobbed by angry herring gulls! This is my account of the highs and lows of flying a drone between the tides.

My fieldwork was carried out in partnership with the North and East Yorkshire Ecological Data Centre, who own a senseFly eBee professional mapping drone (see news item on page 20). You don't need Top Gun skills to fly the eBee – specialist software lets you pre-programme a flight to cover your area of interest at the required resolution while ensuring the drone stays within your line of sight (500 m) as required by law. Then you simply throw the drone in the air and let it follow the flight plan. The eBee's internal GPS ensures that if it is blown off course it will automatically correct itself and complete its mission. It even returns to land at the same spot from which it was launched. What could possibly go wrong!?

NEYEDC Director Simon Pickles launching the senseFly eBee at Kettleness

Our first fieldwork foray with the drone took place at Runswick Bay in North Yorkshire, which was designated as a Marine Conservation Zone this year for intertidal and subtidal features. Kettleness headland was chosen as the study site due to its varied topography and habitats. In contrast with typical fucoid-dominated Yorkshire shores, it is a high energy shore dominated by *Corallina* and *Osmundea* species. As UK law prohibits flying a drone within 50 metres of any person, vessel or vehicle, this site also had the advantage of being little used by beach-goers, being accessible only by a long and strenuous walk over a boulder field!

We chose dates for flying when a very low spring tide occurred around midday to reduce shadows in the imagery, and as each day approached we watched the weather forecast anxiously because the eBee cannot fly in rain or in winds higher than 28 mph. The eBee has a maximum flight time of 50 minutes but the restrictions imposed by keeping the drone within your line of sight meant that several shorter flights were needed to cover the intertidal area. We planned flight times to maximise capture of imagery while the lower shore was exposed, allowing time between flights to change cameras, download data and move to the next take-off point if necessary. Operating within this tight tidal window was stressful - any small delay could mean running out of time to complete all the flights, and delays did occur for several reasons!

Our very first flight almost had to be aborted, when we discovered during pre-flight checks that the terrain maps needed to inform the flight plan had not downloaded correctly to the tablet. The flight planning software could access them via the internet, if only we had wi-fi. I'm not quite sure what the residents of the nearby farm thought when they opened their door to an out-of-breath drone pilot asking to borrow their wi-fi code! Thankfully they agreed, but the delay meant that we only completed one flight that day.

We frequently experienced connection problems between the flight-planning tablet and the drone; only resolved by switching everything off and starting again, which was a very frustrating experience as the tide crept higher. However, the most bizarre cause for delay occurred during a survey at Flamborough Head in August, when our final flight had to be postponed and eventually cancelled due to a flotilla of paragliders making their way from Bridlington right into our airspace!

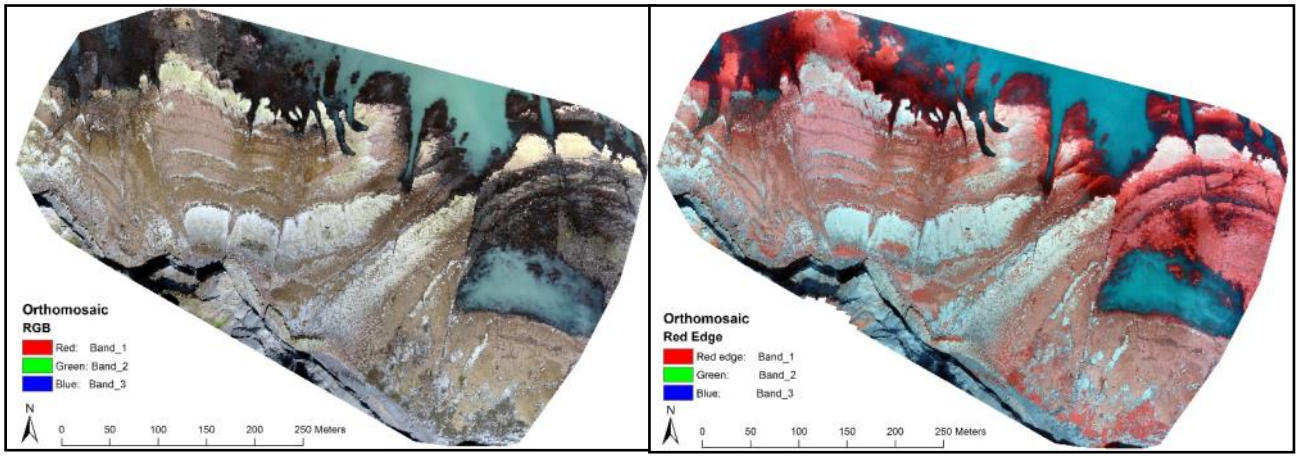
Using senseFly's eMotion software to plan a flight

Selecting suitable take-off and landing sites was an important part of the learning experience. The eBee needs to be launched and land into the wind so although flights can be pre-planned, some flexibility is needed when you arrive on site and assess the weather conditions. We launched our first flight from Kettleness cliff top, which was an ideal central location to provide good coverage of the site, but landing the drone on this very narrow promontory with a 30 metre drop either side was nerve-racking to say the least! So, we launched our next flight from the shore, choosing an extensive flat area of rock and putting down a picnic rug as a landing strip.

Although the eBee returns to its take-off point with an impressive degree of accuracy, it dropped just short of the picnic rug - while no damage was done to the camera, the barnacles left some nasty scrapes on the drone's expanded polypropylene underside. On the second attempt, it overshot the picnic rug slightly, hit its own carrying case and knocked a wing off! Again, no harm was done as the wings just slot back on, but we decided to take more precautions in future!

On subsequent flights we laid out lots and lots of blankets, placed coats and bags over protruding rocks, and also aimed to catch the drone in a blanket or in our arms before it hit the ground, which proved a much more successful tactic. With a cruise speed of 25-

Catch me if you can! NEYEDC's Ecological Information Officer Mark Wills and Paula Lightfoot catching the drone in a blanket to protect its bottom from barnacles – happy landings! Photos by Bex Lynam.



Orthomosaics of part of the Kettleness intertidal zone captured using a standard Canon S110 camera (left) and a camera modified to capture reflected light in the 'red edge' part of the spectrum (680-730 nm) (right)

56 mph it is more 'droning Doris' than 'glamorous Glennis' and the propeller is at the back rather than on the nose for safety reasons, but I was still nervous the first time I saw it heading straight for my outstretched arms – luckily I didn't drop it!
Despite occasional small setbacks, the fieldwork season was a great success. We completed 17 flights and captured 1,500 images which I have processed to create orthomosaics and digital surface models at 4 cm resolution. I also collected over 260 ground truth samples which I am using to train and validate predictive habitat models using an object-based image analysis approach.

Automated classification of the aerial imagery using simple habitat classes (red algae, green algae, brown algae, barnacles/bare rock, sea and cliffs) has produced predictive maps with over 90% accuracy. Early attempts at biotope mapping have produced predictive maps with over 50% accuracy, and I am currently improving these methods, which I believe have great potential for monitoring intertidal habitats.

The drone never was mobbed by herring gulls. A couple of fulmars at Kettleness showed some curiosity towards it, but no aggression. As the eBee's wingspan is smaller than theirs, they probably didn't see it as much of a threat!

NEYEDC's eBee has had its connector board replaced, which should eliminate delays caused by connection issues in future, and a protective plate has been fitted to the underside in case of belly landings on barnacles! We are now well equipped to carry out aerial surveys of the wonderful Yorkshire coast. So…

Come fly with me, let's float down to Filey!
At Speeton Sands there's a one-man-band,
As you glide over Hunmanby
Come fly with me, let's fly, let's fly awaaaaay!

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