



Recorder News

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The Nature of Montrose Basin

Andy Wakelin

The tidal flats of the Montrose Basin, Angus, have long been of major importance as a roosting and feeding area for wildfowl and waders and also a place of diverse recreational and commercial interests. This importance and the need for management to conserve the area's interest was first recognised by local wildfowlers during the 1960s. The Basin was notified a Site of Special Scientific Interest (SSSI) by the Nature Conservancy in 1974.

Most of the tidal flats north of the river channel, amounting to 738 ha, were purchased by the Scottish Wildlife Trust in 1976 and the whole tidal area together with some land bordering it was declared a Local Nature Reserve in 1981. It is also a Ramsar Site, Special Protection Area, Geological Conservation Review Site, and includes a portion of a Special Area of Conservation (the River South Esk).

The Reserve is 1021ha including the entire Basin of the River South Esk. This forms a tidal area more or less rectangular in shape measuring 2.5 km from north to south and 3.0 km from east to west. The river meanders close to the southern shore of the Basin, the substratum varying between fine silt and coarse gravel.

The majority of the reserve lies below the high water mark of ordinary spring tides but, particularly at the western end, there are slightly more elevated areas with zones of saltmarsh, reedbed, brackish and fresh water, unimproved grassland and arable land. The Basin acts as a drainage

	PASSION FOR RECORDING, WILDLIFE, NATURE, ENVIRONMENT, CONSERVATION	IMPROVED DATA QUALITY, STANDARDS, SKILLS OR KNOWLEDGE	JOB SATISFACTION/ PROFESSIONAL REQUIREMENTS	SCIENTIFIC CURIOSITY AND A WISH TO KNOW MORE	DUTY AND RESPONSIBILITY	NEEDING ACCESS TO DATA OF INTEREST	LEAVING A LEGACY	ALL
RECORDER	131 (60.4%)	50 (23%)	13 (6%)	20 (9.2%)	3 (1.4%)	(0%)	(0%)	217
SCHEME OPERATOR	6 (54.5%)	1 (9.1%)	1 (9.1%)	2 (18.2%)	1 (9.1%)	(0%)	(0%)	11
DATA DEVELOPER	1 (11.1%)	5 (55.6%)	2 (22.2%)	1 (11.1%)	(0%)	(0%)	(0%)	9
VERIFIER	8 (14.8%)	29 (53.7%)	4 (7.4%)	5 (9.3%)	6 (11.1%)	2 (3.7%)	(0%)	54
DATA PROVIDER	7 (22.6%)	15 (48.4%)	5 (16.1%)	1 (3.2%)	2 (6.5%)	1 (3.2%)	(0%)	31
FACILITATOR	2 (28.6%)	3 (42.9%)	2 (28.6%)	(0%)	(0%)	(0%)	(0%)	7
SERVICE PROVIDER	2 (14.3%)	6 (42.9%)	6 (42.9%)	(0%)	(0%)	(0%)	(0%)	14
CURATOR	(0%)	7 (38.9%)	6 (33.3%)	3 (16.7%)	(0%)	(0%)	2 (11.1%)	18
SERVICE USER	4 (18.2%)	2 (9.1%)	13 (59.1%)	1 (4.5%)	(0%)	2 (9.1%)	(0%)	22
FUNDER	1 (12.5%)	3 (37.5%)	4 (50%)	(0%)	(0%)	(0%)	(0%)	8
GROUP OPERATOR	3 (20%)	3 (20%)	6 (40%)	(0%)	2 (13.3%)	(0%)	1 (6.7%)	15
DATAUSER	19 (21.3%)	13 (14.6%)	37 (36%)	17 (19.1%)	1 (1.1%)	7 (7.9%)	(0%)	89
TOTAL RESPONSES	184	137	94	50	15	12	3	495

SBIF survey - Motivation Table

sump for the area surrounding it, and the water from the whole catchment of the River South Esk passes through it.

At the north end of the eastern edge of the Reserve lies the disused town rubbish tip which, after some restoration and landscaping, has become an area of banks and hollows with sparse grassland, lush 'weedy' areas and developing scrub. The town of Montrose dominates the Reserve's eastern boundary and much of the western end is farmland.

Land uses and activities within the Reserve include angling, wildfowling, sailing, bait-digging, dog walking and bird watching, as well as mixed farming. These activities attract many people to the area and the Scottish Wildlife Trust built a Visitor Centre in 1995 which caters for casual visitors as well as organised groups ranging from universities to primary schools pursuing academic outcomes to their visit.

The site is designated for eight species of wildfowl and wader having held internationally important numbers of Pink-footed geese and Icelandic Greylags and nationally important numbers of Shelduck, Wigeon, Eider, Redshank, and Knot, all of which rely on the area of tidal flats for food and/or safety. These birds are, apart from one, the eider, all visitors to the Reserve, mainly during the winter. The pink-footed goose is the most numerous autumn visitor with rising numbers reflecting the overall increase

in population over the past five years. The maximum for October 2016 was an estimated 90,000. The site also holds in excess of 10,000 wintering wildfowl and waders.

Monthly WeBS counts and a biennial eider nesting survey provides long-term population data. Two examples of other monitoring projects are the moth trapping done by Paul Brooks and twite ringing by Ben Herschell.

Paul's moth traps have discovered Pale Pinion (1st record 2015) & Copper Underwing (1st record 2016) in recent times. These are examples of moths that seem to be steadily moving northwards. This is true of many moths and in many cases it would appear that gradual climactic changes are the reason. Butterbur was also a good find. The moth is closely linked to the plant of the same name and until recently little effort was made to search out the plant. When a single moth was found at Laurencekirk about



Pale Pinion *Lithophane socia* © Paul Brooks

The SBIF Review - update

First of all, a big thank you to everyone who completed our wide-ranging information gathering questionnaire, which closed on 7th April 2017.

Members of the SBIF Review Working Group are sharing the task of analysing the responses and we are very pleased at the quality of insight and information that people have included within their responses, and we really appreciate and value the amount of time and effort spent by each respondent. Although the analysis is at an early stage we do have some headline statistics to share.

A total of 290 respondents completed the questionnaire, 209 (72.1%) of which were from respondents in Scotland. Responses were received from people living in all but two Scottish local authority areas. In total, the largest number of respondents had roles in non-governmental organisations (77 respondents 26.6%), followed by recorders and recording group operators (47 respondents 16.2%) and national recording scheme operators (35 respondents 12.1%). The rest of the respondents were well-spread across the other sectors and we are pleased at the reach of the questionnaire, both geographically and by sector.

One early section of the responses that has been analysed looks at our motivation, and across all roles the 290 respondents provided 495 responses to the question 'What motivates you to be a <ROLE>?' (each respondent could have supplied responses in relation to up to 12 roles). All responses were classified as relating to, or being primarily motivated by, one of seven broad themes: passion for recording, wildlife, nature, the environment and

conservation, improved data quality, standards, skills or knowledge, job satisfaction and effective fulfilment of their professional function, scientific curiosity and a wish to know more, duty and responsibility, needing access to data of interest, and leaving a legacy.

Respondents with the roles of Recorder and Scheme Operator were primarily motivated by their passion for recording, wildlife, nature, the environment and conservation; those with the roles of Data Developer, Verifier, Data Provider, Facilitator, Service Provider and Collection Curator were primarily motivated by their desire to improve data quality, standards, skills or available knowledge; and, those with the roles of Service User, Funder, Group Operator and Data User were primarily motivated by job satisfaction and effective fulfilment of their professional function (*see Table pg 20 - primary motivators (highlighted): the most frequent theme across responses by role*). Note that one role, Service Provider, had two motivators of equal priority (their desire to improve and their wish for job satisfaction and effective professional fulfilment). Perhaps it was to be expected that the primary motivation for recorders IS a passion for recording, wildlife, nature, the environment and conservation, but it is good to see that message coming through in the results.

We will be releasing more results in NBN monthly Network News, so if you have not already done so please sign up for it at: <https://nbn.org.uk/news-events-publications/latest-stories-from-our-network/enews-sign-up/>

The full report on the findings will be published in the Scotland pages of the NBN website: <https://nbn.org.uk/about-us/where-we-are/in-scotland/review/>

Also this year, the five short-listed nominees from each award category will be announced on 29 September, giving us the opportunity to recognise the achievements of more biological recorders than in previous years.

The winners will be announced at a special ceremony on the evening of 16th November as part of the NBN's annual conference.

Nominations close on 31st July, so why not nominate your unsung hero now! <https://nbn.org.uk/news/nominations-opened-2017-uk-awards-biological-recording-information-sharing/>

The Awards are kindly being sponsored by Opticron, Paramo and the Field Studies Council.

NBN Conference – save the date!

We are delighted to announce that the NBN Conference 2017 will take place on Thursday 16th and Friday 17th November at the National Museum Cardiff.

As we continue to move around the UK, and based on feedback from 2016, Wales was the next logical place to visit, especially with the launch of the NBN Atlas Wales this year. Bookings will open in July, so watch this space for the latest information and programme: <https://nbn.org.uk/news-events-publications/nbn-conference-2/nbn-conference-2017/>

NBN and biological recording display at the Royal Botanic Garden Edinburgh

An opportunity recently arose for the NBN to create a display for the John Hope Gateway, the Royal Botanic Garden Edinburgh's biodiversity and information centre.

Presented with this wonderful opportunity, through the display, we wanted to inform and educate the general public about the importance of biodiversity data, why we need to record and how the information is used by many different organisations for conservation purposes. The display therefore raises awareness of biological recording, highlighting the wide ranging organisations involved and why it is important. It also highlights the NBN Atlas and incorporates a 2 minute slideshow which shares key statistics and messages, as well as briefly showing how to use the NBN Atlas.

The display was installed at the beginning of March and will be in place until the end of the year, so please do drop by and take a look if you are in the area.

5 years ago, Paul started to target the species on the South Esk, the Basin and elsewhere. In all but one site trapped, (on a less than ideal night) it turned up, showing the value of targeted trapping.

A good micro-moth found in the last couple of years was *Chilo phragmitella*. This is a moth that frequents reed-beds and wetland areas. At the time it turned up, its northern-most record was along the Tay. Was it at the Basin all along? Since then it has been found at St. Cyrus NNR, where a relatively small reed-bed is present, and where more trapping has been done than at the Basin, so maybe it is moving north.

Paul is keen to find is Blair's Shoulder-knot moth. First found in Britain on Isle of Wight in 1951, it is another species that has steadily moved north and reached Scotland in 2001. It has now got to Fife's east coast.

Bird ringing takes place regularly and common terns, sand martins and twite have been among the target species.

The NE Scotland Twite Project was started by Grampian Ringing Group to investigate dispersal and migration patterns against a historical population decline (1981-2010). Local ringer Ben Herschell initiated ringing at the Basin, assisted every year by Dennis McCullough. Twite breed on the moorlands of the Scottish Highlands, northern England and North Wales and winter on coasts, on saltmarshes and coastal fields or crofts.

Twite ringed at Montrose Basin in Spring 2009 were re-sighted on the



Twite in the hand © Andy Wakelin

west coast in that same year having travelled about 200-250 km. Re-sightings are generally from crofts and semi-improved grassland; the breeding habitat.

There have been 51 re-sightings or recoveries from the 609 twite ringed on the Basin from 2009-2016. The majority found on the West coast and Western Isles between April and September. There have been some winter re-finds in Angus Glens, Lothian, Dumfries and Galloway, Speyside and Humberside.

Montrose Basin has the appearance of space, naturalness and even wilderness, despite its urban and farmed boundaries. With over 200 species of bird and over 250 plant species it is blessed with a diversity of wildlife, but there is scope for more recording activity over a wide range of taxa and more interesting stories to tell.



The Chairman's Column

Jonathan Willet

Spring is now in full swing and I am enjoying seeing it happen. The Bluebells are just starting to appear, Orange-tips are on the wing and birds are busy nesting and feeding their young. A bit of a later spring than we have got used to of late, but some species haven't thought that. Last week I saw a juvenile Dipper being fed by its parent!

The last week of glorious sunshine has faded and the insects have been enjoying that. I have heard of a sighting of Large Red Damselflies on the wing on the 11th of April, and if confirmed I think that would be the earliest dragonfly sighting in the Highlands and possibly Scotland. So, it is time to get the notebooks (or Smartphones) out and get recording.

The current work of SBIF and its Review report will be make or break to an extent, for the national coordination and integration of structures, but regardless of that outcome people will still carry on biological recording as that is what we really enjoy doing in our spare time.

This year's BRISC conference will take place on the Isle of Cumbrae. The incoming BRISC Chairman Chris McInerny is one of the organisers and

from what I have seen it looks like it will be a cracking event.

I am very pleased that we have found such a capable and enthusiastic replacement for me, so I will finally be standing down at the next AGM. I have greatly enjoyed being the Chairman of BRISC for the last 6 years and I hope I have helped it to keep biological recording in Scotland high on organisations' agendas. Now here is something from Chris.



Vice Chair's piece

Chris McInerny

Thank you Jonathan. First, can I extend thanks to you for the hard work that you have done over the years in your role as Chairman of BRISC. I am sure I am speaking for all members in saying this that you have done a fantastic job during your term, and that they appreciate all that you have done for the organisation.

We too are experiencing beautiful weather in west Scotland, with most trees in leaf, and many plants in bloom - Early Purple Orchids and Green-veined Orchids were in full flower over the weekend. Migrant birds have been arriving at my study areas around Loch Lomond and butterflies are emerging: I have already enjoyed Green



NBN News – May 2017

Mandy Henshall & Christine Johnson

NBN Atlas, NBN Atlas Scotland and NBN Atlas Wales now live!

As planned, the NBN Atlas launched on 1st April 2017. Those of you who are regular BRISC news readers will already have known that the NBN Atlas Scotland (or Atlas of Living Scotland, as it was) had launched in beta version in May 2016, but this was the main NBN Atlas launch to replace the NBN Gateway, which closed down at the same time.

We have already been receiving feedback on the NBN Atlas and would encourage you to continue to send us your thoughts. Please be assured that we are logging all comments and taking necessary action as soon as we can. We would also reiterate that this is just the first step in building a new infrastructure to meet the wants and needs of the whole Network. As such, at launch, the NBN Atlas only provided functionality to the same level as the NBN Gateway. Much of the additional functionality this infrastructure is capable of will be developed and implemented later and this will be

progressed with greater involvement of our partners and stakeholders.

Thank you for your ongoing support with this major change to how we share our biodiversity data. If you have any questions please do get in touch with the NBN Secretariat at support@nbn.org.uk

Nominations have opened for the 2017 UK Awards for Biological Recording and Information Sharing!

These annual Awards, now in their third year, celebrate the individuals and the groups of people or organisations that are making outstanding contributions to biological recording and improving our understanding of the natural world in the UK.

There are six categories of awards this year, as we have added in an Adult Newcomer award:

1. Gilbert White Youth Award for terrestrial and freshwater wildlife
2. Gilbert White Adult Award for terrestrial and freshwater wildlife
3. David Robertson Youth Award for marine and coastal wildlife
4. David Robertson Adult Award for marine and coastal wildlife
5. Lynne Farrell Group Award for wildlife recording
6. Adult Newcomer Award

monitor changes and possible threats to ecosystems, as well as to differentiate them from fluctuations occurring seasonally, for example.

This course granted me further insight into this field and made me more aware of potential routes my career could take me; I also feel better equipped to undertake this career. Most of all, I recognise the importance and critical need for biological recording, particularly in the field of conservation science, so that, armed with the necessary information, we can make informed decisions on actions needing to be taken.



Since Dumfries & Galloway Environmental Information Centre has expanded to include Ayrshire it is now known as South West Scotland Environmental Information Centre (SWEIC).

Many training sessions and talks on various taxa are listed, concentrating particularly on Ayrshire because much effort is being directed to improve and mobilise data for the county.

If you live in the area, know anyone who does or are visiting and want something to do ...look at the excellent new website <https://swseic.org.uk/>

EVENTS

There are now so many opportunities to list for improving old or learning new ID and recording skills or helping with public surveys. A selection follows:

Check the record centres and natural history society websites most of which can be found via BRISC www.brisec.org.uk if you don't know them already.

The TWIC Useful Links page has a comprehensive list of organisations http://www.wildlifeinformation.co.uk/links_page.php and an excellent list of Events <http://www.wildlifeinformation.co.uk/events.php>.

Plantlife & BSBI are offering plant ID training in June and July <http://bsbi.org/scotland>

Bat Conservation Scotland is appealing for more bat roost count volunteers <http://www.bats.org.uk/pages/bctscotland.html>

Swift recording in Edinburgh wants help - training May 24th - email Amber Jenkins or phone RSPB on 0131 317 4100 for information.

There is an Orkney Seaweed Field Meeting 25th - 29th July <https://www.facebook.com/OrkneyFieldClub/posts/590562891137919:0>.

The 2017 BSBI Scotland Photographic Competition is open - two categories again: 1) Plants in the Landscape and 2) Archaeophytes - see <http://bsbi.org/bsbi-photographic-competition>

And don't forget: BRISC Annual Conference October 14th, Millport, Isle of Cumbrae. Full details in the next newsletter.

Hairstreaks in Glasgow and Pearl-bordered Fritillaries in south-west Scotland.

Plans are already well on track for this autumn's BRISC conference, which will be at the Millport Field Centre on Cumbrae on the 14 October (mark your diaries!), with the focus on marine recording. New BRISC committee member Sarah-Jayne Forster has helped enormously in the organisation of this, and it looks like it will be a great event. Following last year's very successful format we will have talks by bursary awardees, followed by a series of presentations on marine recording and recording in south-west Scotland; there will be a wildlife walk on the day. There is also the option for delegates to stay on the island in Millport Field Centre accommodation. We very much hope that you will be able to attend this event. Cumbrae is a beautiful island.

Best wishes, and good recording through the spring and summer.



Millport FSC Centre (part of) photo courtesy of <http://www.field-studies-council.org/>



Editors piece

From having very little for the newsletter by mid-April, lots has flooded in. Many thanks to all the contributors.

There are some inspiring articles again, like Katty's, showing recording can be all year and in weird places, if you choose your taxa. Sarah Clement's SuDs article could be a model for other local authorities. There is a part analysis of the SBIF survey on pages 18-20. I have selected some events details but there are so many its not easy to be comprehensive. If you want to learn something new though, there is a plethora of opportunities!

I have recently been speaking to the local Forestry Commission about screening forestry applications for biodiversity. It's not something, they tend to do through LRC's despite its cost effectiveness. I am reluctant to do it voluntarily as it undermines LRCs, takes time and is not as comprehensive. But it's better than seeing important sites lost under afforestation, ever more likely as Brexit pushes upland farmers to the brink. I was glad to see however, that the local FCS office does refer to Michael Braithwaite's Berwickshire Botanical Sites Register at least.

NEXT ISSUE

The deadline for the next issue is 10th September 2017

Please send articles, news, events and reviews, in Word & photos in jpeg preferably, to me at:

saraheno@riseup.net

Sustainable Urban Systems (SuDS) Audit and Biodiversity Value Review Within Angus

Sarah Clement

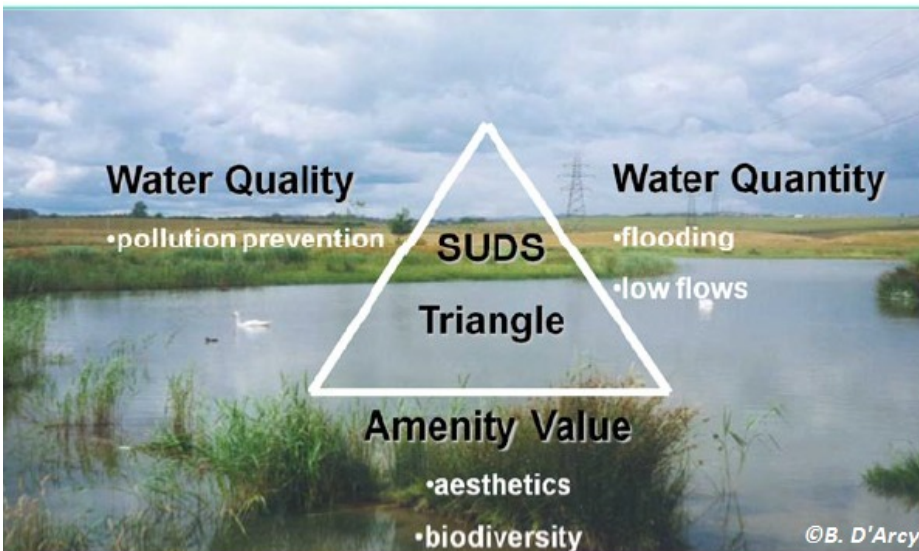
As a French student from the University of Perpignan, I needed an internship so I applied to BRISC. None was available, but they kindly shared my request with their partners. This is how, thanks to BRISC, I found an internship about Sustainable Drainage Systems with Angus Council and Tayside Biodiversity Partnership (TBP). It has helped me improve my English and I will also return to France with new knowledge as, when I arrived in Angus, I had no idea what SuDS meant and I knew nothing about the potential to manage them for biodiversity!

TBP is currently working on a project which consists in establishing the location of the SuDS in Tayside and determining their potential biodiversity. A study had already been done in Perth and Kinross Council by Andrew Law with the partnership of TBP

Perth & Kinross Council SuDS Biodiversity Review and Report (2015). Thus, the same study had to be done within Angus to cover Tayside territory. The two studies can be found on Tayside Biodiversity Partnership website (www.taysidebiodiversity.co.uk).

SuDS within Angus

We identified 35 detention ponds with only 12 wet ones. We decided to evaluate the potential of the wet SuDS for biodiversity by determining presence of amphibians and water quality. We used the Open Air Laboratories (OPAL) water survey (www.opalexplornature.org/watersurvey) determine water transparency, pH and to identify the invertebrates. The quality of the water was finally determined according to the species of invertebrates present. Half the wet SuDS were "quite healthy", a quarter were "very healthy" and the last quarter "needed to be improved". During the OPAL survey, we also noticed the presence and absence of amphibian signs - only 5 of the 12 wet SuDS (14.3%) had individuals or spawn.



HMS Challenger Expedition of 1872-76, Sir John Murray, considered to be the father of modern oceanography. This institute gained a worldwide reputation for its pioneering work, and hosted some of the most accomplished scientists of the time. Today it is run by Field Studies Council (FSC) and operates to bring understanding of the environment to those already in the field and seeking to further their knowledge, as well as interested citizens.



Deploying the beam trawl. Our use of this method required a research license, which stipulates limitations on the size of the trawl, net mesh size, as well as the tow time.

We performed two common marine biological sampling procedures, a beam trawl and a benthic (Day) grab. The former has an infamous reputation among environmentalists as it is an indiscriminate fishing method, producing more by-catch than the

intended species. It glides over the seabed, retaining organisms in its path in a net which trails behind. The second instrument we deployed incorporates a pair of steel jaw-like half buckets, which spring closed on contact with the seabed, retaining a sample of the upper sediment. We used these over areas of seabed known to be of different sediment types, to gain an understanding of biodiversity and abundance in different habitat types.

The results were interesting, with the species observed highly reflective of their environment. The majority could be characterised as robust and resilient, capable of withstanding and thriving in environments unable to support more fragile species. Most abundant were undiscerning deposit feeders, nourished by pretty much all organic matter they stumble upon, followed in abundance by their predators. Less common or not represented at all in our samples were species with highly specialised diets, unable to exploit nourishment from inconsistent sources, or which are sensitive to changes in environmental conditions, e.g. the highly variable salinity and organic matter input that is characteristic of the Firth. When it came to identifying our samples, several stumped even our expert! Upon extensive investigation, one of the species observed had not been noted in this area since the '70's, demonstrating the importance of regular sampling to establish and

about the importance of voucher specimens in museums.



I have worked with the local recorders in Glasgow for the last few years to collate and record in bioblitz events as well as in our wildlife garden festivals. This course made me more confident with using I-record and when to contact specialist to identify species. For the Duddingston Bioblitz in Edinburgh 2016 I was able to help set up I-record events as well as collecting in the records. I hope to continue biological recording as part of my role encouraging others to record in large scale events and local schools. I also hope to record more in my free time too.

Since receiving this grant I have become more aware of BRISC as an organisation and very much enjoyed presenting at the conference (2016) as well as hearing all of the other speakers. I was kindly invited by one of the members to be on the committee which I have accepted. I look forward learning more about the organisation from doing this.

Getting to the bottom of it - sampling the benthic environment

Jennifer Young

Slowly cruising down the Firth of Clyde, it's difficult to remember that we are making our way through a SSSI. The large looming mechanical structures, and the important shipping route, fishery ground and military zone, are in stark contrast to the pristine, untouched images evoked when thinking of these sites.



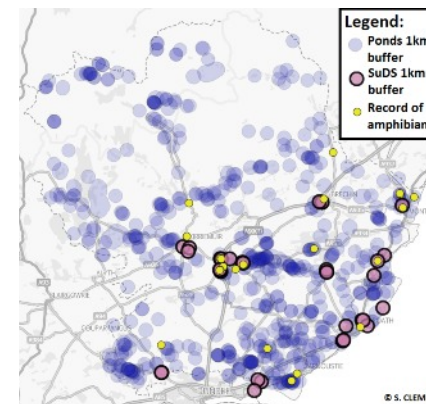
We were on board the RV Actinia to conduct a survey on benthic habitats and species, kitted out with an array of oceanographic equipment. The aim was to determine the presence of epi- and infaunal organisms, as these data can then be used as a proxy for ecosystem health and, when done consistently over time, indicates changes which can be further investigated and attributed to a cause, e.g. climate change.

Studies of this type are not new in this area; the research station here was established by one of the great minds that brought us the discoveries of the

Migration routes

One of the objectives was to determine the possible migration routes for amphibians so we posted a message on the Angus Council's intranet, asking for amphibian records. We received 18 making a total of 23 sites including the 5 SuDS sites. We created a map showing the SuDS and a buffer of 1km around. Then we did the same for every pond and loch within Angus. Finally, we added the records of amphibians.

There are 573 ponds and lochs; 35 SuDS existing; 10 SuDS planned within development; 25 already in place; 12 wet SuDS, 8 dry SuDS and 5 which cannot be accessed. Three SuDS were "very healthy", 6 "quite healthy" and 3 "need to be improved". There was no definitive migration route for amphibians.



Map of Angus with the ponds, the SuDS and the records of amphibians

The work carried out has achieved two outcomes:

- the setting up of a SuDS layer in the Angus Council GIS which should prove useful in future identification of SuDS suitable not just for managing for

biodiversity, but also in future for 'blue and green corridor planning' and



Example of a SuDS in Forfar

- data for TBP to decide which SuDS to focus on and to apply for funding to enhance biodiversity. This will involve TayARG volunteers (the Tayside Amphibian & Reptile Group) and local communities in practical work to improve specific SuDS. In turn this will enable citizen science projects to be set up locally to raise awareness of ponds and SuDS in general and to widen the opportunity for pond life surveys, including dragonflies, amphibians, pond plants, etc. The proposed Tayside Pond Project will work in partnership with a number of organisations and widen the recording potential of a number of species across the region.

The report's recommendations include:

1. Repeat the water quality survey during the summer
2. The need to discuss a potential study about pesticides in the SuDS (Nitrate and Phosphate)
3. Ensure all new SuDS are added to the existing Angus Council database and the attribute table kept up to date

4. An opportunity to undertake amphibian surveys of the SuDS to ascertain future SuDS management with them in mind
5. The inclusion of this new data in the Angus Council mapping layer and the data shared with the NBN Atlas/iRecord
6. Undertake a mapping exercise to show the habitat (and existing gullypots) in 500m around the SuDS
7. Undertake Phase 1 habitat survey of the SuDS in the kilometre buffer
8. Involve local communities in the vicinity of the SuDS in citizen science surveys to add to our amphibian records
9. Propose the mapping of all wetlands in Angus
10. Raise awareness of the biodiversity benefits of SuDS by sharing the report as widely as possible

References:

1. Law, Andrew. Perth & Kinross Council SUDS Biodiversity Review and Report, A Study of Mitigation August 2015. www.taysidebiodiversity.co.uk/
2. Water Environment and Water Services (Scotland) Act 2003. http://www.legislation.gov.uk/asp/2003/3/pdfs/asp_20030003_en.pdf

Botanical Society of Britain & Ireland (BSBI) data on NBN Atlas Scotland

Jim McIntosh

On the 1st of April, the NBN Gateway closed and was superseded by the new NBN Atlas Simultaneously five million Scottish BSBI records were made publicly available on [NBN Atlas Scotland](http://www.nbnatlas.org/) at full resolution with full details of site and recorder names. This is a major and very welcome change in the society's approach to publishing its data. Previously BSBI data on the NBN Gateway included Atlas 2000 data (mostly at 10x10km resolution) and about half a million records captured by a BSBI project to digitise paper records in Scotland between 2005-2012 (kindly funded by SNH).

It has taken much patience and persuasion to convince Scottish Recorders that the data should be made public. What finally swayed our recorders is the growing realisation that there is a greater risk of inadvertent damage if people are not aware of populations, than deliberate damage if they are aware. And, of course, we will withhold records of any sensitive species on a short risk-assessed list or that a County Recorder prefers not to make public. Despite only relating to a handful of records, this has significantly alleviated recorders' concerns.

Four million records are from BSBI Vice-County Recorders' data holdings –

BRISC PROJECTS

Bursary reports

Identifying Difficult Invertebrates

Sarah-Jayne Forster

I received a grant from BRISC to study more about invertebrates that were hard to identify. I have studied for an MSc in zoology and understand the taxonomic groups of the invertebrates but I was unable to actually identify down to species level. I work as a project officer for the RSPB Connecting the people in Glasgow and Edinburgh to nature. I organise many large scale Bioblitz's and survey events across the cities. I felt it was limiting not knowing more about how to identify invertebrates to a level appropriate to record and when it was necessary to collect specimens. For organising Bioblitz's it is also essential to invite the appropriate experts and have the right equipment on hand as well as the right field guides.

The course was held at Preston Mills FSC centre on the 8th-11th June 2016,



and was called Collecting Difficult Invertebrates. We learnt about the

groups that were more difficult to identify in the field, then were left to explore different habitats around the site to collect specimens. It was an ideal location and had a variety of habitats suitable for invertebrates. I learned the appropriate way of collecting voucher specimens from the instructor as well as others on the course. On the second day we had a field trip to a quarry near Wales. I decided to collect a range of invertebrates to give me the most experience collecting, identifying and pinning/preserving. So I collected hymenoptera (sawflies, wasps, bees), Diptera (Hoverflies), molluscs (snails), and crustacean (woodlouse).

Though I was initially a bit put off collecting these animals it soon became clear in the lab why it was necessary in order to identify them. Even under the dissection microscope it was quite tricky to identify the hoverflies using the keys. Some of the other groups were slightly easier but would still be very difficult if dealing with a live specimen. I am now able to help collect appropriate specimens in the field and can hopefully put this into practice more in future recording events.

Pinning and labelling specimens is also useful for me to learn as I work in partnership with Glasgow museums, organising and delivering events that interpret the natural history collection. I feel I am now more able to contribute to preserving existing specimens as well as being able to inform the public

Of just over 200 locations searched about 170 contained Heralds. These included ruined castles and pillboxes, small drains and culverts, mines and caves. Although some places have required skill or madness (often both) to explore, the majority are accessible to anybody of reasonable fitness with a decent torch. Crawling through



Descending into the pit prison at Dirleton castle © Abbie Marland

culverts under paths (and there are many such culverts to try!) has frequently proved productive, Heralds often sheltering in the cracks between pipe sections. Some of the buildings, caves and mines we have explored are also the wintering quarters of bats, and anybody wanting to visit these needs to be accompanied by a person holding the appropriate SNH bat licence. We have had great support from local bat groups who have sent in records of moths (both Heralds and Tissues) they have encountered on their annual hibernation surveys and also allowed us to accompany them on some of their

surveys. Historic Environment Scotland and Local Authority rangers have also been supportive, letting us access some of their properties over the winter. This has involved lots of releasing oil and in one case a hacksaw to undo long-neglected padlocks so we could delve into pit prisons and poke around icehouses and dovecots.

The Tissue moths left the hibernation sites sometime in mid-March. Heralds have been later to leave, but will likely go from all sites during May. Mated females will lay eggs on suitable food plants and then die. The resulting caterpillars spend the summer feeding before pupating and the next generation of adult moths should emerge at the end of the summer and head off in search of suitable places to spend the winter months. The Hibernating Herald survey will be ready to find out where they go.

If you fancy having a look for hibernating moths next autumn and winter we are keen to receive more records. There are still many parts of Scotland that have not been surveyed so it would be fantastic to try to fill some of these gaps. Although we found an impressive 31 Tissues overwintering in 12 different sites there are almost certainly more out there and is very likely that they are waiting to be discovered in new Scottish locations. So if you need an incentive to go underground next winter, surely searching for hibernating moths could be it?

mostly collected and digitised by BSBI members and recorders and their predecessors with some from third party sources after careful verification. We have supplied this data up to and including 2012 and plan to update the dataset at least annually so that the most recent data is never more than 5 years old.

In total, one million records were captured by the BSBI digitisation project mentioned above. For the first time, all of them will be made publicly available at full resolution, subject to the sensitive species treatment outlined above. Notably this dataset includes rare plant data from SSSI Site Condition Monitoring that we digitised for SNH and much of the vascular plant data underlying Plant Life of Edinburgh & the Lothians, *The Changing Flora of Glasgow* and *The Flora of Lanarkshire* – three of our most recent Scottish floras.

The data is being supplied under a Creative Commons licence that requires the BSBI to be credited wherever the data is used non-commercially but prohibits commercial use. Those wishing to use BSBI commercially (such as consultants) are kindly asked to get in touch with us directly.

This is a great step forward in making data freely available to conservationists, researchers, land managers and other botanists and we hope it will promote plant conservation and further recording. Specifically, we hope it will

encourage people to go out and re-find records of notable species and send updates to [BSBI Recorders](#).

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Hibernating Heralds – a winter's moth obsession

Katty Baird and Mark Cubitt

Winter is traditionally a quiet time for moth enthusiasts. Time to repair light traps, ensure all records have been submitted and thumb through the guidebooks to plan next year's moth trapping targets. However, this was certainly not the case for us last winter.

At the beginning of November 2016, I visited a ruined building in East Lothian to verify an impressive record of 56 Herald moths *Scoliopteryx libatrix* that had been seen hibernating there. Sure enough the building did have lots of Heralds, mostly resting on

the ceilings and in small alcoves, and in fact I counted 74!



Herald Moths © Mark Cubitt

But even more exciting, whilst stopping to tie a shoelace I noticed another moth, resting low down on a wall and very well camouflaged. Mark Cubitt soon confirmed this was a Tissue *Triphosa dubitata*, a moth only occasionally recorded in Scotland and believed to be 'irregular and scarce' this far north. This was the first record ever of one overwintering in Scotland. Had it ended up hibernating in East Lothian by accident, or did this discovery indicate a small breeding population somewhere close by? One thing led to another and soon Mark and I were on the hunt for moths in suitably dark places across the Lothians. We recorded lots more Heralds and amazingly found a few more Tissues too. This was sufficient encouragement to get us wanting to know more, and we have spent a good part of the

winter visiting underground locations in search of hibernating Heralds and Tissues.

In order to widen our geographical coverage, and to encourage other people to join in the fun we launched Hibernating Heralds - a public survey asking people across Scotland to look



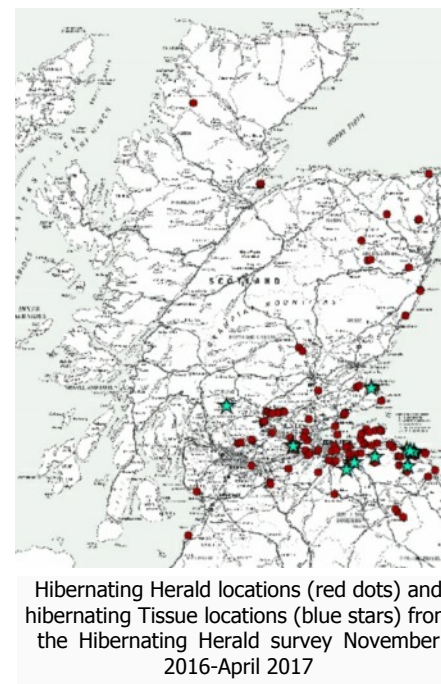
Tissue Moth © Mark Cubitt

in outbuildings and other dark sheltered places for Heralds (and any other butterflies or moths). The survey has largely been managed through a Facebook page, which people can follow and add comment to, and where we have posted regular discoveries and news from the project.

There is also a web page on Butterfly Conservation East Scotland Moth website www.eastscotlandbutterflies.org.uk/mothsurveys.html with full details of the survey and a downloadable recording form.

Records can be submitted and viewed by anyone joining the Hibernating Herald iRecord Activity <http://www.brc.ac.uk/irecord/join/hibernating-heralds> or emailed directly to hibernatingheralds@eastscotland-butterflies.org.uk.

From November to the end of April the survey recorded a total of 2005 hibernating Heralds. By comparison, at the end of December 2016 there were just 1450 records of Heralds from Scotland (mostly light-trapped individuals) in the National Moth Recording Scheme database. We have found Heralds in 96 tetrads, half of which are new tetrads for the species. These figures suggest light trapping is



Hibernating Herald locations (red dots) and hibernating Tissue locations (blue stars) from the Hibernating Herald survey November 2016-April 2017

not necessarily the best method for recording the distribution or abundance of this moth and also show how productive a single-species search involving lots of people can be. They also highlight that care needs to be taken when comparing and analysing abundance figures. There wasn't a population explosion of Heralds in 2016, we've just surveyed them in a different way.



Exploring a culvert in Midlothian © Katty Baird

As news of the survey has spread, more people have become involved and we now have nearly 90 people following the Facebook news feed and have received records from 27 other recorders. Although many parts of Scotland remain to be explored, we have had a reasonable geographical reach with records from Kelso and Culzean in the south to the Black Isle and Assynt in the north.