BIOLOGICAL RECORDING IN SCOTLAND

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Recorder News

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Undeterred in strange times

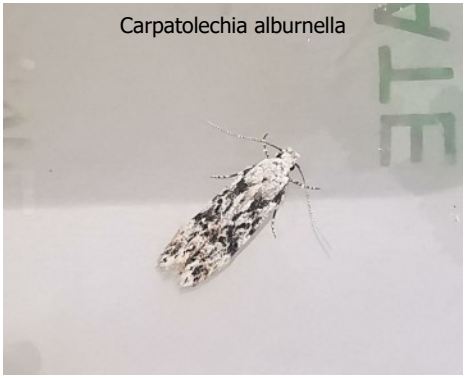
Michelle Stamp

2020 has been a funny old year so far but apart from the fear of COVID-19, making sure to observe rules, and the fear of infecting someone vulnerable, life in lock-down has been interesting. It has given me the opportunity to learn things I have wanted to do for many years, such as Welsh and moth trapping, but also learn about things I hadn't noticed or thought of before like leaf-miners, caddisflies and hoverfly larvae.

The Welsh is fun and quite interesting when you start to delve into the roots of the language and my favourite terms so far are pili-pala (butterfly) and wedi blino (tired). They still make me chuckle. Mothing however has been the most fun I have had since I was around 5 years old and received Buckaroo for Christmas. Like most people we all know a few of the commoner moths such as the Hawkmoths which regularly grace social media pages (if you follow the wildlife enthusiasts). Everything else is a brown moth that you can vaguely recognise as being a moth and not a butterfly by its flight pattern or the fact that it's on your window at night. Since taking the plunge and deciding to build a bucket moth trap (instructions can be found here https://butterfly-conservation.org/in-your-area/east-scotland-branch/budget-bucket moth-trap) my natural history vocabulary has expanded severalfold. I can now be found pouring over little sample pots with my phone trying to zoom in to get the best possible detail of a wing, and the fridge no longer houses much food but is a tempo-rary holding facility for all my day guests until it is time to bid them farewell at dusk. The joy when I spot something new to the area and quickly add it to my spreadsheet so I can send it to my county recorder could be misconstrued as insanity by some. Now a simple walk with my dogs turns in to an expedition while I start spouting on about a Shaded broad bar that I haven't seen here before or The snout that was here last time but I didn't get its photo for my records. I can even feel my dogs rolling their eyes at me. Here are a few of my

favourites from my trap including the Yellow tail moth (page 20) and a new Borders record - *Carpatolechia alburnella* (below).

The moth trap has also introduced me to caddisflies who are sometimes more numerous in the trap than the Large yellow underwings that descend on the trap en masse once the light is turned on. Adult caddisflies are attracted to light and in the UK, we have 200 species. I am still trying to figure out all the details but thankfully there is a good group of people on Facebook and Twitter who do not tire of my silly identifications. Prior to moth trapping, my only encounter with caddisflies were the case-building caddisfly larvae in the river who build their protective outer coverings



Carpatolechia alburnella

from twigs, sand and stones and hide away in the gravel until someone comes along electrofishing or poking about with a net. So far, I only know *Hydropsychidae* and *Athripsodes albifrons* who has stripy antennae and a white hairy head, but it is a start.

As for my other accidental hobbies, they have mostly taken place in my garden. I am very lucky to live in beautiful part of the Scottish Borders with a diverse garden that caters for all. We have woodland, hedgerows, log-piles, nettles, willow herbs, bram-

Hydropsychidae caddis fly

bles, a pond, and some attempts at neat cultivated flowerbeds with lots of pollinator friendly plants, but I am not too particular about "weeds" that creep in to brighten it up. (There is no such thing as a weed, just a plant who knows how to make do with its lot and get on with life). I do not use any herbicides or pesticides, so if it cannot be dealt with by hand or by companion planting, then it stays and hopefully does not cause too much damage. As a result, 10 minutes wandering around my garden with my phone ready always brings something new that I have not seen before or knew existed.

The two most notable and fascinating ones, are Leaf-miners and Hoverflies. I have been photographing and learning about hoverflies for 2 years and submitting my findings to iRecord religiously, but I had not encountered rat-tailed maggots before until I discovered a bucket of water that had discarded vegetation in it and been inundated with rain water. Rat-tailed maggots are very cool. I even somehow managed to get a half decent photo of one that helped identify it to species level. Because of its visible fleshy lateral projec-

tions at the base of its tail, it was identified as *Heliophilus pendulus* or a Sunfly. I have since constructed a proper Hoverfly lagoon as I feel they would welcome something nice and stagnant to lay their eggs in and with over 280 species of hoverflies in the UK, I feel that I can squeeze that in for

Heliophilus pendulus (Sunfly) rat-tailed larvae above and adult below from my garden

them and learn something new along the way. If anyone would like to make their own lagoon, just head over to this website to find out more - https://www.thebuzzclub.uk/hoverflylagoons.

Also, while snooping around the garden I encountered leaf-miners. I had seen them before but not taken much notice. It was just a damaged leaf, no biggie!

However, a leaf-miner group on Facebook grabbed my attention early in lockdown and now I regularly find myself trawling through photos of leaves with squiggly lines. Until recently I hadn't had much luck identifying anything but then I took a photo of a leaf with tracks, didn't think much of it until I sat down later and discovered a small black dot at the end of the track. I went back out to try to track down the random nasturtium leaf and by some miracle I did. A few photos later and the mysterious creature revealed itself, an Agromyzid fly leaf-mining puparium.

If like me you never even knew an Agromyzid fly existed, then you will understand my excitement at not only learning about a new creature but also finding its offspring fully intact in the leaf. It has since been identified to species level as *Chromatomyia horticola*.

Of course, this story may get even more interesting if the puparium has been parasitized by a parasitic wasp, then I have a whole new subject to learn. Watch this space as my new pet is in a jar.

Agromyzid fly (*Chromatomyia horticola*) leaf-mining puparium in a nasturtium leaf

Chairman's Column

Chris McInerny

We are experiencing difficult and challenging times, with the COVID-19 pandemic dominating the news and our daily lives. During this period I hope that all BRISC members have been safe, and have managed to enjoy our natural world, which can be a great source of comfort and consolation.

COVID-19 has had a direct impact on BRISC and its activities. We have had to postpone the 2020 annual conference and AGM, many funded bursary courses were cancelled, and much biological recording was prevented or reduced. Under these circumstances the BRISC newsletter was delayed until the autumn; but a big thanks to Sarah Eno for producing this issue. The BRISC committee will meet in November remotely by Zoom, and we will discuss how to take BRISC activities forward. Though the future remains uncertain, we hope to have an annual conference next spring with the delayed AGM, both likely to be using remote technologies. We will keep BRISC members informed.

On a more positive note, I used my lock-down walk to find new sites for recording natural history near my home in the West End of Glasgow, and saw new things. These included my first comma butterflies for Glasgow along the river Kelvin, and the discovery of Ruchill Park. The latter is a lovely place, with trees, two ponds and a nice flower bank with orchids, butterflies, moths and water voles. The ponds hold good numbers of palmate newts and three species of damselfly, and on the bank many six-spot burnets and seven species of butterflies. Another find at Ruchill Park was purple hairstreak. I had mapped out suitable oak trees during the spring and returned to them in August when the adults fly and found them in two different trees. Subsequently, more were found more in other oak trees, so it appears that they are widespread in the park, a new location for the species in Glasgow.

Best wishes, and good recording through the remainder of 2020 and into 2021.

Large Red damselfly *Pyrrhosoma nymphula*

Editors piece

Sarah Eno

What a weird year. The 'lock-down' coincided with me being on the sofa until end of March with a broken ankle followed by painful hobbling. The accident happened on a visit to one of my favourite BRISC conference locations – Anagach Woods in Speyside, just before Christmas!

At least the cancelling of all field work such as Northern Brown Argus surveys was not a huge personal blow, but the combination of various global catastrophe(s) and my own problem contributed to quite a low spell. Having agreed not to produce a Spring issue, this is a bumper edition, opening with the impressive energy of

Michelle Stamp's learning and recording of wildlife when and where she could. Then, when I heard that someone was looking for Glow worms I got very excited. I saw one in the '80's on the old railway bed at Mossdale, Galloway and never forgotten, though exactly when and where were not recorded. So Charlotte's article is the first on this slightly neglected species. The Bursary report on the bryophyte course by Savannah is from last year and there won't be any for this year, sadly. Included also is Ashleigh Whiffen's carrion beetle article left over from last year. The photos will not be brilliant at A5 scale so obviously if you get enthused (and listening to Ashleigh, who would not) go to the website and download the ID chart. The report from SWSEIC on a special lock-down project is a terrific example of quick thinking and execution. Unfortunately I just had to omit some charts because of space and also reproduction limitations of the newsletter. I have indicated what and where the missing graphics are and they can be found on the BRISC website along with this newsletter.

My recording has been kept to local non-moving wildlife such as the BSBI garden flower survey, 'pests' such as mangold or beetroot leaf miner, a highly visible explosion of Field voles (who destroyed the strawberries, peas etc) and a Wood-mouse in our outside vegetable rack. We also found two more New Zealand flatworm under a long parked old caravan in our garden. Another record, but much angst as I hoped I had eradicated them!

There have been an exhausting number of internet based ecological events and activities but one that I enjoy is Botany in Scotland https://botsocscot.wordpress.com/. It's a blog run by the Botanical Society of Scotland. Many great plant stories can be read here.

BRISC PROJECTS

BURSARIES

Identifying Bryophytes for Conservation and Recording

Savanna van Mesdag

I recently completed an FSc course in Preston Montford, focusing on bryophytes, the small (usually green) plants that you find pretty much anywhere and everywhere. I am very grateful to have received a bursary from BRISC and the Glasgow Natural History Society enabling me to carry out this course.

While bryophytes are often taken for granted or ignored, there are many interesting species about which I was keen to learn more, especially how to identify them for my PhD which will involve plant-related fieldwork. While my PhD fieldwork this year may be far more problematic than I'd originally anticipated, due to current circumstances, I know I will be able to carry out fieldwork at some point and use the skills that I learnt during my bryophyte-filled weekend.

The course began on Friday evening, after I arrived at the centre in time for supper. Our evening introductory talk provided us with an introduction to the main groups of

bryophytes. These include liverworts and mosses. However, there are groups within these that are particularly important in terms of bryophyte identification: leafy liverworts; thallose liverworts; acrocarps (mosses); and pleurocarps (mosses). We came across several species from these four groups during our field trips. Having said that, we did not encounter hornworts, another group of bryophytes, these are rare in the UK and were not present at any of the sites we visited.

On Saturday, we left after breakfast to visit Iron Bridge. Specifically, very close to the bridge itself where we looked at bryophytes in Benthall Edge Wood and the nearby limestone quarry. Species here included *Brachythecium rutabulum, Kindbergia praelonga, Eurhynchium striatum* (all pleurocarps) and *Lophocolea heterophylla* (a leafy liverwort). While these are all common species, they were found in great abundance at this site, more so than I've noticed in many places.

After a very steep, long walk up the Benthall Edge Wood hillside, we reached the limestone quarry. Here, the topography and underlying geology were rather different, with the bryophyte species and species assemblages also being noticeably different. Most of the site was dominated by *Rhytidiadelphus triquetrus*, which has one of the best common names for a bryophyte - Big Shaggy-moss! We also observed some species growing on bare rock left over from quarry activity, including *Tortella tortuosa* and mosses from the genera *Encalypta, Dicranum* and *Trichostomum.* These species can survive well on bare and/or disturbed substrate. Considering the fact that my PhD involves fieldwork on steel slag sites, I'm expecting a lot of these species, or similar to be present.

That evening, we practised using bryophyte keys from the literature. We identified species that we had found and collected from the woodland and in the quarry. We went through the keys slowly and deliberately together for a couple of species, including *Brachythecium rutabulum*. This was good practice and was very helpful for me, as I often struggle with the language, terminology and subjectivity in keys.

This same evening, we were also taught how to strip stem leaves off mosses so these leaves could be mounted on slides for observation under a compound microscope. This is a standard method for many bryologists to ID bryophyte species accurately.

The author examining bryophytes

On Sunday, we went to a completely different site, in an upland area with plenty of bog, peat and heather. The weather was a bit more bracing that day than it had been the day before, so we did not stay long in one place. The species here were mostly adapted for conditions with high acidity, peat and little drainage. Such species included *Sphagnum* mosses, *Platyhypnidium riparioides, Bryum pseudotriquetrum* and *Bryum weigelii.* The last species is rare in the UK, being found only in its specialist habitats, so it was a good find for the day! It was interesting to compare this site with the more calcareous, alkaline sites from the day before.

Sunday evening was quite relaxed, as we were left to our own devices to observe bryophytes under microscopes, asking questions if we were struggling with identification. I used this time to identify the bryophytes I'd collected in the field. It was a good chance to practice the keys further, being very helpful indeed!

Bryum weigelii at Long Mynd

On Monday, I had to leave before a test, but I was very glad to join the walk around the grounds of the field centre to remind myself of familiar species and to look at a few new ones. Species that we observed that morning included those from the genus *Orthotrichum* and the species *Aulacomnium androgynum.*

Since my course finished I have spent time identifying local bryophytes, using the various skills I have learnt, enjoying my new familiarity with many genera and species of bryophyte.

I am very glad that not only will these skills be incredibly beneficial for recording bryophyte species in the field for my PhD, at some point, but they will also allow me to continue my interest in bryology for, hopefully, the rest of my life.

SBIF UPDATE September 2020

Rachel Tierney

As you will likely be aware, SBIF have not yet obtained funding for full implementation of the SBIF Review recommendations and in light of the Covid crisis, funding will be ever harder to secure. We are therefore looking to put forward a smaller proposal to the Scottish Biodiversity Strategy focused on core enablers that will still progress the Recommendation's implementation overall. This proposal will facilitate the core elements of an effective biological recording infrastructure in Scotland which in turn will help generate and share a definitive biodiversity evidence base to inform a green recovery.

Aided by NatureScot funding (thank you NatureScot!) for the SBIF Development Officer until December we have been working with NatureScot and the Scottish Local Record Centre community to explore the outline of this proposal. We are primarily investigating how we can align the services offered with those required by NatureScot to deliver their statutory duties and how we can establish a small National Biodiversity Data Hub for Scotland that can provide leadership and coordination to support delivery of biodiversity data at both national and regional levels.

Alongside developing, and seeking funding, for this project we have also been supporting the Cabinet Office's Geospatial Commission to develop a project to undertake a similar review of the biological recording landscape and needs in England modelled on the original SBIF Review. This project will explore whether the recommendations for Scotland can be applied in England as well and if not, what the recommendations for England should be instead.

We are also delighted to welcome Rona Sinclair, Marine Data & Ornithology Advisor at NatureScot to the SBIF Advisory Group. We recognised that the marine sector was under represented during the Review process and NatureScot have provided funding for Rona to work part time on SBIF related marine issues. This will include undertaking an analysis of marine stakeholder views to confirm alignment with the Review recommendations. Rona will be part of the SBIF team until the end of the financial year and if you are involved in marine recording, I am sure you will be hearing from Rona soon!

Over the coming months we will keep you in the loop as we endeavour to make the most difference for the SBIF Community where we can. We will focus on facilitating the development phase that we need to get started – primarily through securing the resources necessary to take this forward. If you can offer either in-kind contributions or funding do contact Rachel Tierney:

rtierney@scottishwildifetrust.org.uk in the first instance.

We continue to thank all BRISC members and supporters for your continued input into the SBIF Review and look forward to hopefully reporting some more concrete news in the not too distant future!

You can read more about our recent progress in our SBIF-Review-Highlight-Report-20200727-July-2020

A glowing report for Scotland

Charlotte Martin

Scotland can boast some world class wildlife spectacles - Golden and White Tailed Eagles soaring, Ospreys fishing, Stags rutting and Orcas breaching to name a few.

Unknown to most is the spectacle that takes place during darkness in the Summer. If you know where to look you may be lucky enough to witness a *Lampyris noctiluca* female lighting up to attract a mate. Commonly known as a Glow worm, Scotland has the one species. 'Worm' is a misnomer. *Lampyris noctiluca* is a species of beetle in the Firefly family and a rather charismatic one at that.

Eggs hatch in the Autumn and the larvae get to work hunting snails and slugs. Using their mandibles they nip at the soft flesh and inject a substance that turns the molluscs flesh to soup which is lapped up. If it gets a bit messy (I guess snail soup would be a messy affair) they have a bristle like appendage which is used to wipe the soup from their mouths….an insect with manners!

This stage through the instars lasts for around 18 months at which point the larvae go on the march for a suitable pupating spot. April and May are good months to spot the larvae doing this.

Emerging in adult form the Glow worm is sexually dimorphic. Males are winged and at first glance are rather drab looking beetles; females are non-winged and resemble the larval form. Neither sex feeds in the adult form and are therefore short lived.

The female, full of eggs, lights up her last three segments with a green bioluminescence to attract the low and weak flying males. Waving her abdomen she can appear to be slowly flashing although her

light is permanently on. Once mated she descends to the low vegetation, her light goes out and she lays her eggs and dies. Males also die after mating, although it is not known if the males can mate with more than one female before dying.

Males are not bioluminescent. They are equipped with extremely large eyes and a hood over the eyes (presumably to protect them) which are used to detect the females glow. She will take up to 10 consecutive nights of glowing to attract a mate before her energy is spent.

For my Scottish research I started by reviewing the data in the UK Glow Worm Survey and I was lucky to be mentored by Glow worm experts Robin Scagell and Jim Alder. Scottish records are sparse and fragmented. Very few people are traipsing the countryside in the hours of darkness; the glow could be (and is) confused with LEDs, moon reflections from shards of glass or rubbish. And once you've observed a female glowing you realise how easily it can be missed.

However, whilst on a Bat survey course in Nottinghamshire in April 2019, I met Jim Alder who took me to one of his sites - a main road flanked by grass verge and disused railway re-purposed as a path. We started by lifting stones on the old railway embankment and as I lifted the second rock there was my first Glow worm!

Glow worm - female

Returning to Scotland, and at least knowing what the larvae looked like, I started going through approximately 50 historical records covering about 12 counties dating back to 1901. Plus a few more from old Parish records. Two counties stood out, Dumfries and Galloway (D&G) and Argyll and Bute.

The first site I chose was in D&G and close to where I live. The preferred habitat is damp unimproved grassland, good cover and winter hibernation sites for the larvae in the form of rocks and logs; availability of prey populations and no artificial light. Many records in the UK are of populations on railway embankments. This D&G site fit the bill perfectly - it was a reasonably recent record and a small site as the recorder had only made a causal observance.

I use a lure in the form of green LED (attached to 9v battery) of a similar wavelength to a female's glow. If I can attract the males, that proves their existence but these lures must used very responsibly. The energy the adults have is for breeding and I don't want them to waste it!

Once darkness has fallen to a level where colour cannot be distinguished, a transect is walked, placing the lures en route. At the same time I keep a close watch on the ground for signs of females. On the return trip the LED lures are inspected, any males are counted and the LED lure is extinguished. Generally the lures are on for a maximum of an hour.

We had not gone 10 yards when I spotted a green glow and here was my first female. As beautiful as she was, her behaviour perplexed me. Being flightless I had expected glowing females to gain a little height on the vegetation, to maximise the

chances of being seen by a male. This one was on the ground under flattened vegeta-

A female in typical glowing position

tion. We carried on with our transect, taking in both sides of the road. No males came to the lures but over a mile stretch we encountered a good number of glowing females. Most of them, like the first, were low down in thick vegetation. One particular female was glowing in the middle of the road! Presumably swept up by a vehicle's slip stream. She kept glowing despite putting her in a pot. Now I understood why WW1 soldiers in the trenches used Glow worms for reading lights to avoid alerting the enemy! Her glow was mesmerising and a memory I will never forget.

During 2019 I used social media to raise awareness and ask local wildlife groups if anyone would like to accompany me. D&G, Argyll and Bute along with the Borders proved to be bursting with enthusiasm. So I was frequently accompanied on surveys. Notable assistance came from Mark Pollit at SWSEIC, Buzz and Co at Glen Trool, Karen at Glenlude, Edinburgh Natural History Society and Fiona Rogerson and Co of Dumfries and Galloway. They were invaluable and I cannot thank them enough for their help.

A nice success was a Borders site, thought to have lost its population. The landowner was pleased to know they were still there and in good numbers and promised to take care of them. They need unimproved land, so any effort to look after and preserve them will benefit invertebrates in general.

Cumbrae has a population and it was late July when I got there. The lures attracted Males in good numbers while the females were less evident. Arriving back at 1 am however, I spotted a female within 1m of my tent and almost on the splash zone of the breakers but here she was glowing brightly on short cropped grass.

The 2019 season concluded with an invitation from the Arran Natural History Society to give a presentation. I hoped to spend a week there this Summer with members assisting, but COVID-19 put paid to that.

Thankfully, despite lock-down, there have been some records added this year by recorders local to their area, two of which are new sites.

I use iRecord and the Glow worm survey specific form. In the past two years 29 records have been added with 16 being positive and verified.

Altitude does not appear to affect them very much. I need further year of surveys to confirm, but so far our Scottish Glow worms appear to be tougher than their English counterparts, if comparing the females glowing activity in terms of outside temperature and times of glowing.

So, I am sure Scotland will prove to have a thriving population and a wider distribution than is currently thought. I urge keen naturalists to visit the UK Glow worm Survey https://www.glowworms.org.uk/ for detailed information of the species https://www.glowworms.org.uk/scotland.html.

Wildlife at Home Challenge: The results of SWSEIC's COVID-19 lockdown wildlife recording project

Peter Norman & Mark Pollitt

Background

On 23 March 2020, Prime Minister Boris Johnson made a public announcement regarding the spread of COVID-19 into the UK, banning all non-essential travel and contact with people outside the home, and closing almost all schools, businesses and amenities. People were ordered to keep apart in public and the Police were empowered to enforce the regulations. The situation was popularly termed 'the lockdown'.

Staff from South West Scotland Environmental Information Centre (SWSEIC) had already begun working from home but following the lockdown, addressed the need to cancel or postpone all SWSEIC public events planned for summer 2020. Staff then began to consider safe alternatives that would allow wildlife recording to continue.

The Wildlife at Home Challenge was devised to encourage wildlife recorders to keep submitting records to SWSEIC, despite being largely confined to their houses and gardens. It was open to all who were resident in Ayrshire and Dumfries and Galloway during the lockdown and was launched in the SWSEIC monthly e-newsletter in April, and subsequently promoted using social media contacts.

The premise of The Wildlife at Home Challenge was for participants to find, identify and record as many species as they could from within, or recordable from, their houses and gardens. A set of rules was devised relating to how records could be collected, though as there was no way of enforcing such rules, it was simply assumed that participants adhered to them – there is no evidence that they did not.

iRecord, a UK online wildlife recording system operated by the Biological Records Centre, was used as a vehicle for submitting records to the Challenge. iRecord allows members of the public to collate and share sightings, have them checked by experts and made available to support research and decision-making at local and national levels. SWSEIC is able to download all relevant data from iRecord.

A separate 'activity' area within iRecord was established for the Wildlife at Home Challenge to enable SWSEIC to request that all data submitted followed the Challenge rules. It also ensured that the Challenge data was kept separate from the general iRecord data and enabled all participants to view all records submitted to the Challenge within minutes of them being added. This included presentation of results on various charts and graphs, automatically generated and updated by iRecord.

In addition, SWSEIC produced weekly e-newsletters that summarised recent records and provided ideas and encouragement for future recording. A number of small prizes were offered as further encouragement to participate, with the emphasis being primarily on taking part, rather than finding rare species or submitting the most records. SWSEIC is grateful to NHBS Ltd for contributing prizes. There is little doubt that constant feedback encouraged some participants to increase their recording effort.

Records and Recorders

This short report represents a summary of the results of the Challenge. The activity ran from 1st April to 31st May 2020. In total, 4,343 records were submitted during this period (*Number of records per day graph omitted*). Most records were submitted directly through the iRecord

website though contributions were also received via the iRecord smartphone app.

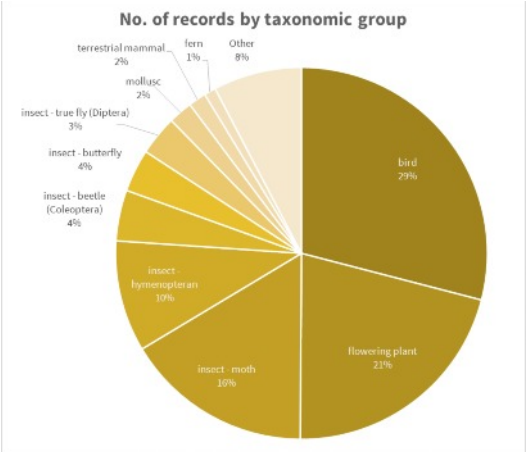
The total number of people joining the iRecord Wildlife at Home Challenge activity was 80. Of these, 54 people submitted records. Participants included local experts, some at county recorder level, as well as less experienced recorders.

Top species

Not surprisingly, given their popularity, visibility and ease of identification, all of the most frequently recorded species were birds. The resident garden birds of Blackbird, Blue Tit, House Sparrow, Dunnock and Starling occupied the top 5 places. The timing of the Challenge was ideal for the recording of summer migrant birds, but only Swallow and Swift made it into the top 20. (*Table omitted*)

More surprisingly, the next most frequently recorded species were bees. Bumblebees are popular with the public but require a little practice to identify due to the variation in queens, workers and males. Despite this, two species made it into the top 10, Tree Bumblebee and Large Red-tailed Bumblebee. These are two of the easier species to identify, but Tree Bumblebees have only been present in SW Scotland since 2013. Solitary bees are even more difficult to identify, so the presence of Red Mason Bee, another species apparently spreading in Scotland, in the top 20 most frequently recorded species was unexpected.

The only other species to feature in the top 20 were butterflies. The timing of the Challenge coincided with the main flight period of Orange-tip, so it came as no surprise to receive good numbers of records for this species. If the number of records for each species group is examined (see pie chart, below), birds (with 29% of all records) were again the most popular group. However, flowering plants with 21% of all records were not too far behind, despite the fact that no individual species made into the top 20.

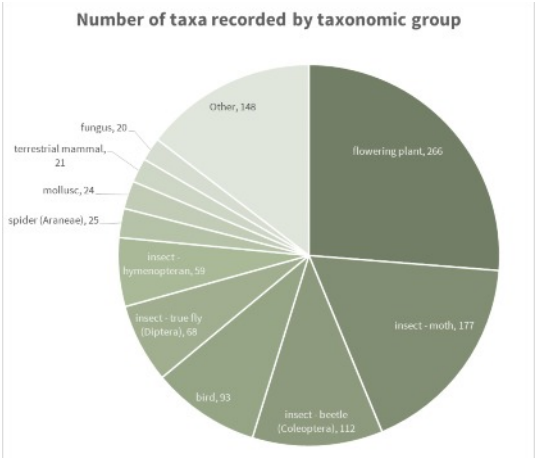


Of the insects, moths were more frequently recorded than either Hymenoptera (bees, wasps & ants) or butterflies. And if all the insect groups were combined, they were the most frequently recorded group, surpassing the number of bird records.

The number of records of Diptera (true flies, mainly records of hoverflies) and molluscs (slugs and snails) was higher than might have been expected, but much of this can be attributed to the online support of iRecord expert verifiers.

If the number of taxa recorded in each group is examined (see pie chart, below), the picture is very different to the number of records. Flowering plants, with 266 taxa, were the most diverse group, followed by moths and beetles. Birds, with 93 recorded species, was only the fourth most diverse group. This situation reflects the national position, in which there are many more

species of flowering plants than birds, and substantially more insects than either of them. Indeed, if the totals for the number of taxa in all insect groups recorded in the Challenge are combined, once again insects top the rankings, being the most diverse taxonomic group overall.



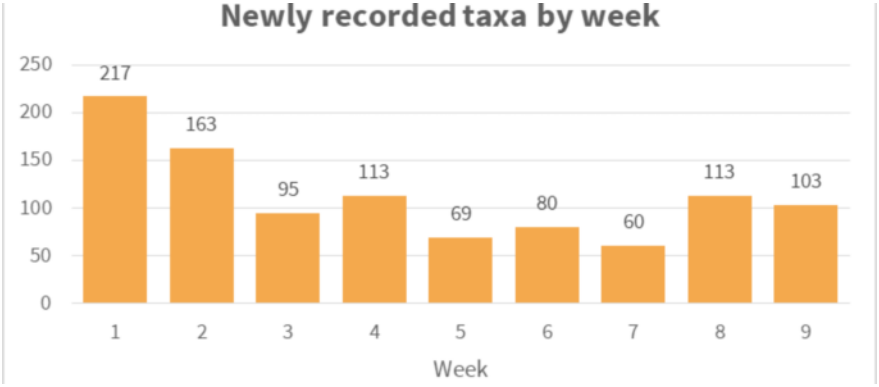
The passage of spring was evident in the records submitted, with each week seeing the addition of newly recorded taxa as they developed, arrived or emerged (see chart, below). After the initial flurry in the first two weeks of the Challenge, on average around 90 previously unrecorded taxa were added each week.

As spring continued, an increasing proportion of the newly recorded taxa were insects (*Weekly proportion of newly recorded tax omitted*). This reflects the great diversity of this group in and around our gardens and their lifestage progression, as more species matured into readily detectable and recognisable adult stages as the weeks progressed. In contrast most species of bird had been recorded by the end of April (week five of the Challenge) and very few new species were added in the later weeks.

Locations

Generally the spread of records throughout SW Scotland was good, with the only significant hole being, not surprisingly, in the centre of the region, a hilly area with a sparse population. The areas with the greatest number of recorders were the more populated areas such as the Solway coastal plain between Lockerbie and Gatehouse of Fleet, and in North Ayrshire.

In total records were received for 61 different tetrads (2x2 km squares) covering 42 different hectads (10km squares). The



vice counties of Dumfriesshire (VC72) and Kirkcudbrightshire (VC73) accounted for more than three-quarters of all records submitted. (*MAP of locations next page*)

Highlights

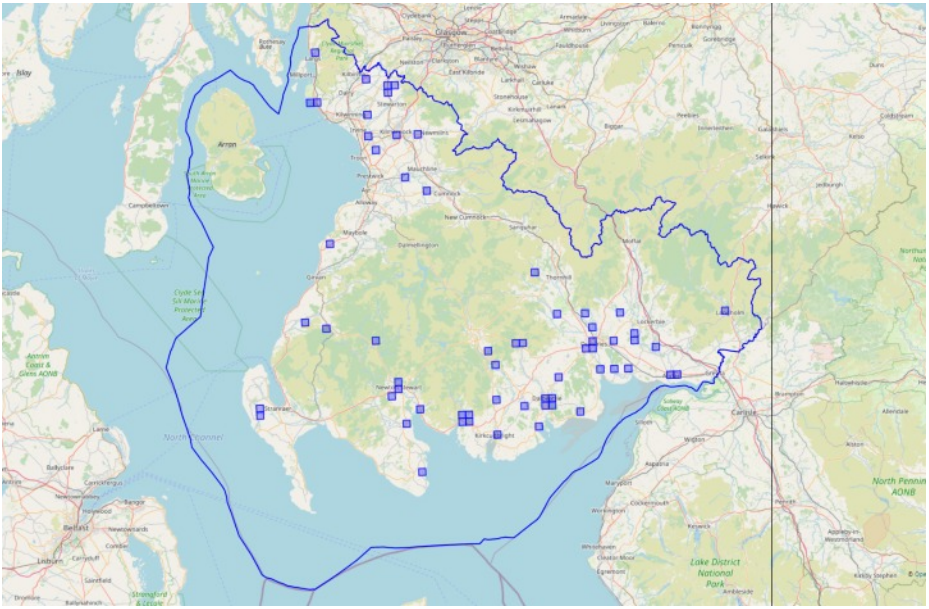
The purpose of the Challenge was to keep recorders active during the lockdown and to highlight the diversity and importance of local wildlife. It was not designed or intended for the Challenge to record rare species. Nevertheless, a number of uncommon species came to light as a result of the Challenge.

A record of a pill woodlouse from a garden in Glencaple was confirmed on iRecord as Southern Pill Woodlouse *Armadillidium depressum* (below), by Alison Roberton and the first record for Scotland. It is active at night on loosely mortared walls, especially with limestone or lime mortar. It is considered an introduction outside of its main range in SW England. The most northerly record was previously in Lancashire.

New Zealand Bitter-cress *Cardamine corymbosa* is a small annual that naturally is found in alpine tundra and rocky coastal habitats in New Zealand and a small area of Australia, but was first recorded in Scotland as a weed on the rock garden at the Royal Botanic Garden Edinburgh in 1975. It has since spread via the horticultural trade and has become naturalised on paths, cultivated ground and in pavement cracks. Its discovery in a garden in Ochiltree during the Challenge was the first record for Ayrshire.

Narrow-bordered Bee Hawk-moth *Hemaris tityus* is day-flying moth that mimics bumblebees (*see next page*). Once widespread in the UK, it has declined significantly, now being mainly restricted to moorland in western Britain. It is now very rare in SW Scotland with few recent records, but was recorded during the Challenge at Glentrool. A second record at a site near New Abbey was received just after the end of the Challenge.

Narrow-bordered Bee Hawk-moth *Hemaris tityus*



Map of Dumfries and Galloway showing locations of records

Carrion Beetles ***Ashleigh Whiffen***

Carrion beetles (family: Silphidae) are a fascinating group of insects, many of them are associated with dead vertebrate animals which mean they're also important decomposers/recyclers. Species in the genus *Nicrophorus*, commonly referred to as Burying beetles or Sexton beetles, are well known for their habits of burying small vertebrate carcasses to avoid competition from other carrion feeders. This group also display bi-parental care, a rare trait among beetles and for this reason are increasingly being used in behavioural research. Other species will feed and breed on carrion but do not care for their young. There are a few members of this group that aren't associated with carrion at all, some are herbivores and a couple are even predatory! In total, there are only 21 species recorded from the UK and most of these are reasonably large in size, making identification a little bit easier than some other groups of beetles.

Nicrophorus investigator in a light trap

A family of burying beetles in their mouse house

The burying beetles (*Nicrophorus* sp.) can be easily recognised as they are reasonably large, chunky beetles, with big eyes, clubbed antenna and truncated wing cases (elytra). They are all attracted to light, so regularly turn up in moth traps.

N. humator

N. vespilloides

N. investigator

Necrodes littoralis *(right)*
Another species regularly recorded at light. It's entirely black apart from the very tips of the antenna which are orange. Similar to *N. humator* but the antenna are not clubbed. Unlike the burying beetles, this species breeds on carrion in situ and does not display parental care.

Necrodes littoralis

Two Silphids (*below)* commonly encountered in woodlands are: ***Oiceoptoma thoracicum,*** which feeds on carrion, fungi and dung, and ***Phosphuga atrata***, a predatory species which hunts snails.

Oiceoptoma thoracicum

Phosphuga atrata

National Silphidae Recording Scheme

The **National Silphidae Recording Scheme** collates records for this group of beetles. You can find out more about the scheme and how to recognise the rest of these fascinating beetles here: http://www.coleoptera.org.uk/silphidae/home

Follow the scheme on Twitter: @SilphidaeUk.

NBN update - September 2020

NBN Conference 2020 – book now!

This year's NBN Conference is taking place as a fully online event on Wednesday 18 November. It is running in collaboration with iSpotnature, Faculty of STEM, The Open University.

The theme is "The NBN at 20 – Changing times", which will help mark the 20th anniversary of the NBN Trust.

Confirmed speakers are:

- Clare Blencowe – Association of Local Environmental Records Centres
- Aletta Bonn – Helmholtz-Centre for Environmental Research | German Centre for Integrative Biodiversity Research (iDiv)
- Jamie Cranston – University of Exeter
- Keiron Derek Brown – Field Studies Council
- Mark Elliott – Devon Wildlife Trust
- Jo Judge – NBN Trust Chief Executive
- Richard Ostler – Rothamsted Research
- Tom Thomson – The Invertebrate Conservation Trust (Buglife)

In addition, we are delighted to confirm that Sir Charles Burrell of the Knepp Castle Estate will deliver this year's Sir John Burnett Memorial Lecture.

The event will run using Microsoft Teams, an online conferencing platform. Information on joining the event will be sent out in advance, along with guidance to help you with using the software.

The costs to attend are as shown below:

- Students: £20
- Members: £30
- Non-members: £40

More information and how to book can be found on the NBN website: https://nbn.org.uk/news-events-publications/nbn-conference-2/nbn-conference-2020/

BTO dataset updated on the NBN Atlas

At the beginning of September, we updated the main BTO dataset to include records up to the end of 2019. The previous dataset had records up to the end of 2015 and was becoming increasingly outdated. It was a very large dataset of almost 152 million records and has been replaced by five smaller datasets, which will be easier for the NBN Atlas team to manage and update.

The aggregation of data resulted in a drop of 37,127,619 records supplied by the BTO. So, in September, there was a drop in the number of records on the NBN Atlas of 35,726,764 records.

https://nbn.org.uk/news/nbn-atlas-news/bto-dataset-update/

New NBN Atlas Systems Developer

We are delighted to welcome Justin Dee to the NBN Atlas development team. Justin will support the design, development, testing, implementation and ongoing support and maintenance of the NBN Atlas.

NBN Atlas News

We issued the third NBN Atlas Newsletter in April, which had updates on the following:

- NBN Atlas data used in the Darwin Tree of Life Project
- NBN Atlas development updates
- Spatial layer update
- Updated master species list for NBN Record Cleaner

- iNaturalist records on the NBN Atlas
- NBN Atlas spatial portal update
- Data quality tests
- NBN Atlas Isle of Man reaches one million wildlife records
- New datasets
- Updated datasets

The Newsletter is issued every six months to registered NBN Atlas users. The next issue will be out this October.

Sign up to receive the Newsletter: https://nbn.org.uk/news-events-publications/latest-stories-from-our-network/nbn-atlas-news/nbn-atlas-news-sign-up/

New species to the NBN Atlas

We have started to report on the sharing and upload of records for species, which are new to the NBN Atlas. The list will be updated whenever new species appear. https://nbn.org.uk/news-events-publications/latest-stories-from-our-network/nbn-atlas-news/new-species-on-the-nbn-atlas/

NBN Trust Patron heads letter to Boris Johnson

Sir John Lawton, NBN Trust Patron, has called for £1 billion to Make Space for Nature 10 years on from the ground breaking report.

On 16 September, the 10th anniversary of their influential Making Space for Nature report, an eminent panel of nature conservation experts, academics and land managers led by Professor Sir John Lawton has written to the Prime Minister calling for immediate action to reverse wildlife declines by committing an additional £1 billion to rebuild nature in England.

https://nbn.org.uk/news/nbn-trust-patron-heads-letter-to-boris-johnson/

NBN Trust is 20

The National Biodiversity Network Trust was set up as an independent charity in 2000, to oversee and facilitate the development of the Network. So, during 2020, we are celebrating our 20th anniversary!

During the year we are highlighting the 20 most popular datasets on the NBN Atlas. This "top 20" is an objective measure of the most downloaded wildlife datasets - taking into account the length of time the dataset has been on the NBN Atlas.

View the datasets:

https://nbn.org.uk/news-events-publications/the-nbn-trusts-20th-anniversary/

FAIRsFAIR Support

At the start of the year, the NBN Atlas was selected to be part of the FAIRsFAIR consortium, with the aim of improving the level of interoperability in its data holdings. FAIRsFAIR – Fostering Fair Data Practices in Europe – aims to supply practical solutions for the use of the FAIR data principles throughout the research data life cycle. It contributes to broader adoption of FAIR policies and practices and in the development of standards for FAIR certification of repositories. The NBN Trust will be involved in testing the specifications of the interoperability layer and will provide feedback to the development team on issues and/or give suggestions to improve the specifications.

The first implementation of the data repository features is planned to be ready in February 2021 and the second will be one year later.

Trevor James
The NBN Trust was very sad to note the passing of Trevor James on Friday 5 June 2020.
Trevor worked for the NBN Trust for many years, starting in 2001 as the National Societies & Schemes Project Officer and continuing as Development Officer until 2013, when he retired. He then worked as a consultant for the Trust for a year until 2014. He will be sorely missed.
https://nbn.org.uk/news/trevor-james/

Contacting the NBN Trust
In response to the ongoing COVID-19 pandemic, all NBN Trust staff are still working from home.
If you need to contact us, please email: support@nbn.org.uk or alternatively you can email individual members of staff direct and they will respond as soon as possible.
https://nbn.org.uk/news/contacting-the-nbn-trust/

Yellow tail moth *Euproctis similis*
Photograph by Michelle Stamp

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COPY DEADLINE :
10 JANUARY 2021

Articles, recording news, book reviews, stories of favourite places or species are all welcome. Please send copy in Word or Open Office format. Photos are welcomed but best as jpeg files and less than 800kb in size. If larger send them via wetransfer or similar. Please do not embed photos in your text as it sometimes can be hard to extract them!

Please send by email to the editor:

saraheno@riseup.net

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