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BURSARIES 2018

Biological Recording in Scotland (BRISC) and Glasgow Natural History Society (GNHS) will be offering new bursaries to anyone living in Scotland to cover some of the costs of attending a suitable training course in 2018. Up to £200 or 75% of the cost of the course, whichever is lowest, is usually offered to successful candidates.

The closing date is likely to be the end of January 2018. Please watch for updates on the BRISC website:

<http://www.bris.org.uk/Bursaries.php>

Membership costs per year

Individual £15.00

Student £5.00

Corporate, LRC's etc £50.00

NEXT ISSUE DEADLINE

- **JANUARY 19th 2018**
- **Please send articles, news, events and reviews, in Word & photos in jpeg preferably, to me at:**
- **saraheno@riseup.net**



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Recorder News

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Biological Recording on the Ardeer Peninsula

Iain Hamlin

The Ardeer Peninsula is a large sand dune system in Stevenston, North Ayrshire. Its hundreds of hectares contain a diverse array of habitats, including dynamic foredunes, botanically-rich fixed dunes, dune heath, a variety of temporary and permanent wetlands, broadleaved woodland, unmanaged conifer plantations full of

deadwood, seasonally flooded willow carr, saltmarsh, mudflats, disused sand quarries and other types of wild brownfield land.

For the past 10 years there have been concerted attempts to develop the site for housing, industry and leisure. Currently the landowner is keen to develop a large housing estate, power plant, sports complex and holiday village in the sand dunes and a marina on the saltmarsh. One long-standing obstacle to conservation at the site was the fact that the peninsula had a negligible number of biological records pertaining to it. Because it had been home to an explosives factory for over a century, next to no naturalists had been allowed to visit the site. On being opened to the public in 2009, the FRIENDS group* led a push to record wildlife on the peninsula. We amassed a site list of several hundred species and contracted Buglife to undertake fieldwork to supplement this.

Moth trapping has produced records of uncommon moths, such as Coast Dart (Nationally Scarce B), Thyme Pug (Nationally Scarce B), Broom-tip



Coast dart *Euxoa cursoria*

(Nationally Scarce B), Small Yellow Wave, The Anomalous and Archer's Dart. Observations of Lepidoptera during the day have added Beautiful Yellow Underwing to the site list, along with local butterflies such as Dark Green Fritillary and Small Pearl-bordered Fritillary.

We've found many interesting beetles on the peninsula too. The 'sandy volcanoes' of the Minotaur beetle *Typhaeus typhoeus* are found across most of the site, with dead beetles being found regularly. Absent from most of Scotland, this southern species appears to be locally common only in the dunes of Ayrshire. Another rare dung beetle recorded from the site is *Aphodius paykulli* (Nationally Scarce B), a specialist of dung on sand dunes.

A further interesting beetle species found on the peninsula, *Hypocaccus rugiceps* (Nationally Scarce A), is part of an assemblage of invertebrates largely restricted to dune systems in the northwest of Britain. Other species in this assemblage include the mining

bee, *Colletes floralis*, which is commonly encountered on the peninsula's Hogweed, Angelica and Giant Hogweed in July; the hoverfly, *Eumerus sabulonum*, which is often swept from areas of open sand containing its larval foodplant, Sheep's-



Eumerus sabulonum

bit; and the large, orange-legged robberfly, *Pamponerus germanicus*, which has been caught in the more sheltered, inland parts of the dune system.

Of particular note is the assemblage of bees and wasps. Over 100 species have been recorded on the peninsula. This represents the largest site list of any site in Scotland. Rare species found at the site include the mining bee, *Andrena ruficrus* (RDB3), the



Andrena ruficrus a mining bee

Thank you for your patience whilst we resolved the issue with downloads and speed of response from the NBN Atlas and we hope you find the larger download facility suits your needs.

Nominations are in for the 2017 UK Awards for Biological Recording and Information Sharing!

We are delighted to announce that 2017 saw us receive more nominations than in the previous two years, with 59 people nominated across the six award categories!

The five short-listed nominees from each category will be announced on 29 September, giving us the opportunity to recognise the achievements of more biological recorders than in 2015 or 2016. Keep an eye on social media and Network News for the names of those who have been shortlisted from 29th!

The winners will be announced at a special ceremony on the evening of 16th November as part of the NBN's annual conference, so why not come along and meet them in Cardiff?

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

NBN Conference – not too late to book!

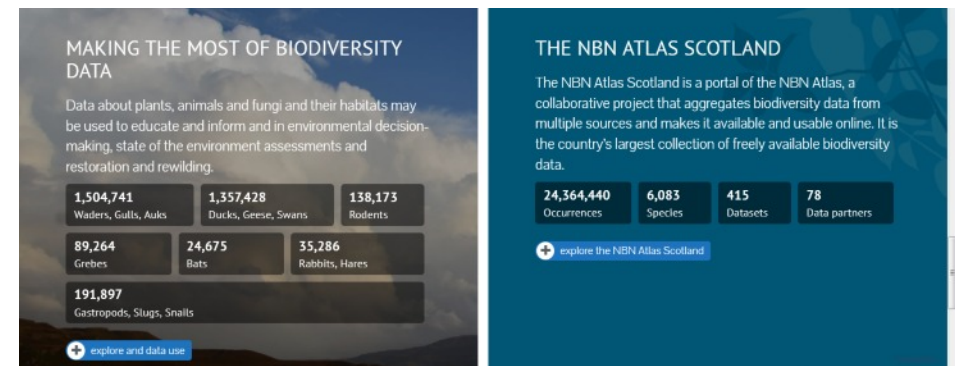
This year's NBN Conference 2017 is taking place on Thursday 16th and Friday 17th November at the National Museum Cardiff.

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 are still open and you can find the latest information and programme on the NBN website: <https://nbn.org.uk/news-events-publications/nbn-conference-2/nbn-conference-2017/>

NBN Atlas use statistics

Having started to analyse the use of the NBN Atlas through Google Analytics, we have brought together the statistics from launch on 1st April, to date. The information can all be found on the NBN website: <https://nbn.org.uk/news/nbn-atlas-use-statistics/>

Editor's screen shot of stats from Atlas Scotland



NBN News – September 2017

Update from NBN Atlas makes UK the 2nd-largest data publishing country to GBIF

In July, when the NBN made its first major update of datasets from the NBN Atlas to GBIF.org, the 47 million occurrence records it added immediately made the United Kingdom the second-largest national contributor of data to the global index.

This milestone marks the conclusion of NBN's own efforts to implement machine-readable licensing of all occurrence datasets. In August 2016, to give NBN more time to work with our data partners and ensure appropriate licensing and permissions, GBIF and NBN withdrew 329 datasets containing 27.3 million records, representing 72 percent of all occurrences published by UK institutions at that time.

More than half of the withdrawn datasets have now returned, restoring nearly 12 million records, joined by 484 new ones holding more than 35 million occurrences. About two thirds of NBN's data partners now choose to share open data through the GBIF network.

Thanks to a reconfiguration in how NBN shares data from the UK, each of these NBN data partners all now appear in publisher search results on GBIF.org. That change means they also receive clearer, more direct credit when their datasets contribute to published research, at least when

researchers use recommended citations for their download DOIs.

This practice makes it easier for GBIF to link user downloads applied in research and policy back to its contributing datasets, publishers and countries.

You can read the full article written by Kyle Copas of the GBIF Secretariat on the NBN website: <https://nbn.org.uk/news/update-nbn-atlas-makes-uk-2nd-largest-data-publishing-country-gbif/>

Download limit on NBN Atlas has been increased

We are pleased to report that the original limit of 50,000 as the number of records that could be downloaded from the NBN Atlas Scotland has been removed.

This is the same for NBN Atlas and NBN Atlas Wales. A much higher figure of 10 million records is now in place and this seems to be working well. With the 10 million record download facility users can download all the data for any species and all the data for any dataset except for the BTO dataset – Birds (BTO+Partners) which has 151 million records.

The new system is queue based, which means that if there are lots of requests, they are queued and handled one at a time. During periods of high activity this may result in a longer response time, but this should only be noticeable for the larger downloads. There are several queues in use, larger downloads being handled on one queue, smaller on another.

New features include:

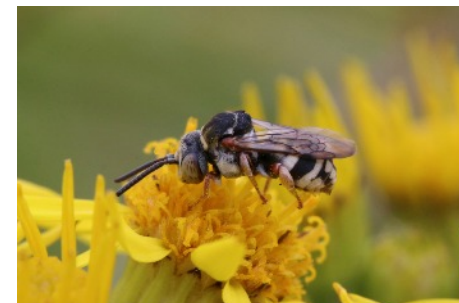
- shapefile downloads
- customised downloads – allowing users to select groups of fields

digger wasps, *Oxybellus mandibularis* (Nationally Scarce A) and *Ectemnius ruficornis* (Nationally Scarce B) and the



Oxybellus uniglimus

spider-hunting wasps, *Priocnemis schoedtei* (Nationally Scarce B) and *Ceropales maculata*. The peninsula plays host to several species of bee and wasp that are at the northern limit of their British distribution. These include the tiny, yellow-faced bee, *Hylaeus brevicornis*, the black and red cuckoo bee, *Sphecodes pellucidus* and the black and white striped digger wasp, *Oxybellus uniglimus*. Among the 'southern' species found on the peninsula, the cuckoo bee *Epeolus cruciger* is perhaps the most



Cuckoo bee *Epeolus cruciger*

interesting. The first Scottish record pertains to a male caught nectaring on Wild Thyme on the Ardeer Peninsula. Subsequent records from neighbouring dune systems suggest that it flies earlier than other northern *E. cruciger*. Furthermore, unlike the *E. cruciger* found elsewhere in Scotland and Northern England, which attack the nests of *Colletes succinctus*, Ayrshire's *E. cruciger* attack the nests of a different host, *Colletes floralis*. These marked differences in ecology have led to a genetic study of Ardeer's *Epeolus* bees to investigate the possibility that they represent an as yet undescribed, cryptic species.

Although the site's species list now runs into the hundreds, it lists only a fraction of the what is present. Some of the notable gaps in biological recording pertain to the peninsula's wetlands. There are many wetlands at the site, varying from shallow to deep, permanent to ephemeral, freshwater to brackish. However, next to no pond dipping has taken place, leaving the aquatic fauna largely unrecorded. Similarly, although the over-mature, unmanaged conifer plantation that dominates the north of the peninsula (the Black Powder Wood) represents a regionally important deadwood resource, its fauna has been largely ignored by biological recorders. Regarding families, spiders are particularly poorly recorded and the recording of flies has largely been restricted to hoverflies. There are undoubtedly many rare species yet to be discovered.

The biological recording efforts described in this article have resulted in the peninsula being formally recognised as the most biodiverse Local Nature Conservation Site in North Ayrshire and form the basis of current attempts to protect the site from development.

*<http://stenstonconservation.org>

Further information also available on <https://swseic.org.uk/2017/07/secret-wildlife-relic-ardeer/>



Chairs column **Chris McInerny**

Can I start by encouraging all BRISC members to come the

BRISC autumn conference, which will be at the Millport Field Centre on Cumbrae on the 14 October, focusing on marine recording. The advert for this conference, and booking details, are shown on page 5 **AND** note travelling details on page 6.

New BRISC committee member Sarah-Jayne Forster has helped enormously in the organisation of this event, and it looks like it will be a great conference. Following last years' 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 also 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.

The summer weather has been rather mixed this year, but I personally have been able to get about to enjoy many plants, insects and birds. I particularly enjoyed seeing Large Heath and Scotch Argus butterflies. I have also been continuing to survey reptiles and, despite the weather, have seen a quite few juvenile Adders, Slow-worms and Common Lizards. So, it looks to be a good breeding year for these creatures. Best wishes, and good recording through the autumn and winter. And I very much hope to see you on Cumbrae in October for the BRISC autumn conference.



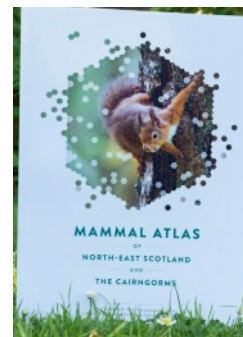
Editor's column **Sarah Eno**

I have done some recording this year, mainly botanical but

also as they appear, a number of dead mammals - shrews and a surface hunting mole on our local patch!

However I also registered for the BCT Bat Roost Count knowing our larch clad 'eco-house' has 55 Pipistrelle roosts. Dutifully I sat out on the two summer evenings to count their emergence. So it was disappointing that only 7 and 8 emerged from their maternity roost over the front bay window. Now,

Contd pg 6



Mammal Atlas of North-East Scotland & the Cairngorms Pub. NESBReC.

The most comprehensive description ever of land mammals in North-East

Scotland was launched in Aberdeen recently, showcasing animals as varied as pine martens, wildcats, bats, deer, seals – and even humans.

The Mammal Atlas of North-East Scotland and the Cairngorms, compiled and published by the North East Scotland Biological Records Centre (NESBReC), is a fully-illustrated book, mapping 43 mammals found in the North East, using 77,592 records from 1,472 observers from all over the area and beyond.

It tells some fascinating stories of the many amazing mammals found throughout North-East Scotland, including the recovery of red squirrels, the recent significant spread of pine martens eastward to the outskirts of Aberdeen, and the discovery of a new bat species (Leisler's Bat) for the area.

The project, which began in 2013, encouraged the public to report animal sightings, from those who had never before submitted a mammal sighting through to experienced biological recorders. In the book, each mammal species is depicted by a photograph, a distribution map and a short account of its ecology, in both the local and UK contexts. The data from the project will continue to be held by NESBReC and used by planners, researchers, conservation agencies, students and environmental

consultancies, who all need access to wildlife data.



Fox on outskirts of Aberdeen
Photo Paul Chapman

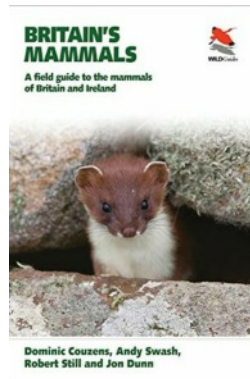
The atlas encompasses the local authority areas of Aberdeenshire, Aberdeen City, Moray and the whole of the Cairngorms National Park. The total area covered is 11,629 km², which is around 15% of Scotland's land area. This region includes approximately 297 km of coast and land up to 1,309 m altitude at the second highest point in the UK.

Funding for the publication was sourced from Aberdeenshire Council, Cairngorms National Park Authority, Forestry Commission Scotland, Scottish Natural Heritage and the Scottish Ornithologists Club.

The book is on sale at shops throughout North-East Scotland and is also available from several online sellers.

Glenn Roberts
NESBReC coordinator

REVIEWS



WILDGuides
Britain's Mammals: A field guide to the mammals of Britain and Ireland by Dominic Couzens, Andy Swash, Robert Still and Jon Dunn. Princeton University Press ISBN 978-0-691-15697-2 RRP £17.95

Many with a keen interest in mammals have spent a number of years waiting and wishing for a new mammal field guide. However that wait is over and the waiting was worth it! WILDGuides have produced Britain's Mammals: A field guide to the mammals of Britain and Ireland. It is a well-made and well laid out field guide that covers both terrestrial and marine mammals, including vagrants and introduced species. Each species is given between a quarter page (mainly rare vagrants and extinct reintroductions) and up to 4 pages with high quality photos and very in depth information on the specific species.

WILDGuide books are not just about identifying species though. Their books are so much more. They are, to put it plainly, a fine read! There are nearly 50 pages before the guide even starts detailing the species accounts. These pages cover subjects including the biology and life cycle of mammals, their history in Britain and Ireland, names and classification and all the different ways to watch and monitor mammals.

After such a drought of mammal field guides it could be said that any quality of field guide would get a good review but this book is full of high quality photos and so much information that it is hard to find anything negative to say about it. In fact, having read it cover to cover, not just once but twice, I have only found one thing that I can possibly criticise and that is that one of the distribution maps is clearly wrong. I know that distribution maps can be slightly historical but in this book the Reeves' Muntjac Deer map has it shown as quite widespread in Scotland which is not the case. Other than this small niggle I struggle to find anything to be critical about in this well written and well laid out field guide. In fact I was so impressed by this WILDGuides book I have invested in nine other of their titles!

Graeme Wilson



The Editor's mole - oblivious to us watching, she was moving so fast that it was hard to photograph her. But we got a great wee video of her snuffling in the wet clover-rich lawn.

BRISC Annual Conference and AGM 2017

Marine Biological Recording

Saturday 14th October 2017

FSC Millport, Millport Field Centre, Isle of Cumbrae, Scotland, KA28 0EG

Programme

0930-1000 **Arrival and registration**

1000-1005 **Chairman's welcome**

1005-1045 **BRISC Bursary talks**

Susan Falconer - Bee identification *Hannah Bischof* - Introduction to seaweeds
Miranda Shephard - Hoverfly identification *Magdalena Blanz* - Grass identification

1045-1115 *Aisling Gribbin* (Where's Wildlife in Ayrshire) **Putting Ayrshire's Wildlife on the map.**

1115-1145 *Natalie Hirst* (Seasearch Coordinator Scotland) **Seasearch – How volunteer data contribute to protecting the marine environment**

1145-1200 *Aroa Sampedro-Fernandez* (The Conservation Volunteers) **The Edinburgh shoreline: Engaging with the past and the present**

1200-1230 *Phillip Cowie* (FSC Millport) **Recording at Millport, past, present and future**

1230-1300 *Andrew Brownlow* (Scottish Marine Stranding Scheme) **Dead Useful? What strandings can tell us about the Marine environment**

1300-1400 **Lunch and Raffle Draw**

1400-1430 **BRISC AGM**

1430-1440 **Conference Close and briefing for field visit**

1440-1630 **Field Visit to Cumbrae**

1630-1700 **Depart, Tea and Coffee**

Costs: Student: £15; member £35; non-member £40

Overnight B&B for Friday night: £35 for shared room with dinner.

BOOKING by Eventbrite <https://www.eventbrite.co.uk/e/brisc-conference-agm-2017-tickets-34104174504?aff=es2> or search for BRISC at www.eventbrite.co.uk

Or email: briscsecretary@live.co.uk for other payment options.

Directions to BRISC

Conference, Millport, Cumbrae

Trains: Regular services from Edinburgh and Glasgow to Largs for ferry. See www.scotrail.co.uk

Buses: Regular services from Glasgow to Largs for ferry. See <https://www.firstgroup.com>

Ferry to Cumbrae: travels from Largs every 15 mins

Editors Column, contd from pg 4

I can watch dozens going home at 0530 am! However, now isn't the right recording date for the BCT roost count!

Many thanks again to authors of the contributions, and those who have pointed me to sources such as Iain's article. There is always pressure to develop coastal sites for such as new golf courses. I find these the most upsetting especially as there are often sufficient facilities nearby.

The hard copy of this newsletter only has B & W photos (to keep costs down). If you want to see these in full glorious colour and much better detail, you should contact Andy Wakelin (see back cover) for the A4 or A5 downloadable copy.

The lovely poem Snipe, is by Barbara Means, a busy recorder in Dumfries and Galloway. She wanted more naturalists to read them and is trying to get a collection together to publish.

COUNTING SNIPE

Two!

One!

Three!

Four!

Rocketing up

Now there's three more

Woops! Nearly tripped!

Another five!

Go round that pool

I saw six rise

I'm up to forty

Look out! Take care ...

Another three

It's slippy there

Zig-zagging so fast

Five!

Six!

Eight!

Two!

Over 70, now

Must be passing through

How many on the bog?

I wish we knew!

TWIC

Graeme Wilson

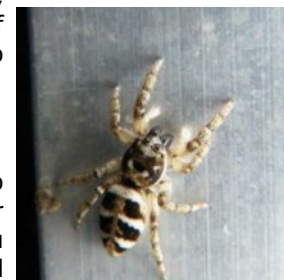
Scottish Spider Search

The Wildlife Information Centre is working in partnership with the British Arachnological Society, Caledonian Conservation Ltd and Buglife and part funded by Scottish Natural Heritage to carry out the Scottish Spider Search project. In the survey we are only asking for records of four species of spider. These should be easy to identify without any special knowledge or equipment, but you will need to look closely!



Four Spotted Orbweb Spider

If you see one of these spiders please let us know by recording your sighting on iRecord. To help us to confirm your observation, please include a photograph with your record. Additional details such as habitat, behaviour, number of individuals are also interesting, so include them if you can. Simply go to <https://www.brc.ac.uk/irecord/join/scottish-spider-search> to sign up to the activity and enter your records. If you have not registered for iRecord before you will also need to



Zebra Spider

do that but once you have you can also enter records into other activities or just use iRecord for general recording!



Daddy Long-legs Spider

Once your record has been submitted to iRecord spider experts from the British Arachnological Society will check the records to confirm the identification.

The information will be sent to the Society's Spider Recording Scheme, which collects records of spiders from across the UK. It will also be published on the NBN Atlas Scotland. Your information will help us to understand the distribution of these spiders better and provide information to help monitor their spread or decline.

For more details see [www.http://www.wildlifeinformation.co.uk/](http://www.wildlifeinformation.co.uk/)



Nurseryweb Spider

Photographs of 4 Spotted Orbweb, Zebra and Nurseryweb Spiders (c) Chris Cathrine. Photograph of Daddy Long-legs Spider (c) Colin Legg.

and Glasgow Natural History Society (GNHS). The bursary allowed me to attend a weekend introductory-level course on lichens at the Field Study Centre (FSC) in Kindrogan in May 2017.

This very rewarding course not only provided me with a basic understanding of lichen biology and ecology, it also introduced me to ID techniques, such as using a hand-lens and dissections under a microscope.

I also learnt how to conduct chemical examinations on lichens, so called "spot tests" both in the classroom and in the field. Furthermore, it encouraged me to use ID keys without being intimidated by the volume of information held within its pages (>1,000 pages). And I gathered a small reference collection of lichens during the course, which have helped massively in my current studies of this wonderful world.

Some Winter Conferences

See BRISC or own websites for details

- **October 7th Butterfly Conservation Trust - Annual conference, Battleby.**
- **November 4th BSBI/BBS Annual Conference, RBGE, Edinburgh**
- **November 16-17th NBN Conference, Cardiff**
- **November 25th TWIC Annual Conference, Stow, Scottish Borders**

Local Record Centres - news

**NESBreC
Glenn Roberts**

Here is a short update on some of NESBreC's other activities so far this year. On 25 March we held our annual Recorders' Forum in Aberdeen. This was another successful meeting with 98 recorders from all over the North East (and some from farther afield) converging to listen to some interesting presentations and to discuss different facets and issues to do with recording and supplying records to NESBreC. The audience was a good mixture of experience levels, interests and ages. It is good to see younger people at these events where they are able to make contact with long-established and knowledgeable recorders. It is a good starting point for future recorders as well as a great forum for recorders to learn from each other.

As we do every year, we are running various training days at various locations to boost species identification skills and encourage record submission. These events are very well received by attendees, especially since we are able to run them for free, thanks to a contribution in our grant from SNH. In addition, we have been attending diverse events across the North-East in order to raise awareness of biological recording and to showcase our Mammal Atlas, of course. The book has proved to be a very useful tool to help get our message across – there is nothing quite like a product you can hold in your hand with lots of great photos and maps of the local area to demonstrate how the public can contribute to our understanding of local biodiversity.

To keep in touch with NESBreC, visit www.nesbrec.org.uk or www.facebook.com/nesbrec

BRISC PROJECTS

Bursaries

**Grass Identification
Magdalena Blantz**

Currently in my first year of studying for a PhD, I am investigating historical and archaeological evidence of animal food and fodder in the North Atlantic Islands, for which I moved to the Orkney Islands. My work focusses on the consumption of seaweeds and grasses by terrestrial animals. When the first humans arrived on the Orkney Islands around 9000 years ago, forests would have been dominating the landscape. In contrast, today, Orkney is nearly entirely deforested, and has a grassland-dominated economy, with over 90 % of agricultural land being used for grazing sheep and cattle, and cereal production threat to wild grasses. Since the introduction of livestock to Orkney around 6000-5000 years ago, the range and abundance of grasses thus changed dramatically, while the distribution of



Instructor Dr Sarah Watson-Jones helping with grass identification in the lab

seaweeds would have been much more similar to that of today.

Soon after taking up my PhD studies, I improved my seaweed ID, but grasses

remained difficult to identify, as initially, they all looked very similar. This was exacerbated by my starting my PhD in October, so vegetative features were all I had to go by. However, thanks to BRISC/GNHS/SNH, I was able to attend a four-day FSC course on grass species identification at Malham Tarn this past July,



Grass identification at Chapel Fell, with Malham Tarn in the background

instructed by Dr Sarah Watson-Jones. In addition to greatly improving my identification skills, this also provided me with an excellent opportunity to meet and discuss with ecologists and volunteer recorders, and to learn about their different views on current conservational efforts, and sustainable land management.

On the first evening we got to grips with the nomenclature of grass morphology, and how grass morphology may vary between different genera and species. Much of the next days was spent outside, where we were shown 36 species of 25 different genera and an intergeneric hybrid, from a range of different habitats, such as limestone plateaus, limestone hillsides, wetlands, acidic soils and roadsides. For several species, identification was performed in the lab, as this required use of hand lenses and microscopes, in order to see the small glumes, awns, lemmas and

other identifying features. The range of different keys available enabled me to find my personal favourite (Grasses, by Charles E. Hubbard).

My future recording work will involve the study of macroalgae at the tidal island Brough of Birsay, and the North Atlantic Islands in general, and coastal grasses, and how the species distributions of seaweeds and grasses are likely to have changed over the last 5000 years.

Over the last year, I have been involving other students in my research in order to share my new-found knowledge and enthusiasm for seaweeds and grasses. This also helps in detailed investigations of selected species as part of archaeological and environmental studies in addition to supporting ongoing recording efforts.

Loving Lichen Marcia Rae

Ever since I have worked in the Highlands I have been fascinated by Lichen, their



unique forms, their durability and historical importance for both humans and other wildlife. They can be hard to miss in all their fluffy, colourful glory on display in the clean air of the north of Scotland. However Lichen identification and ecology does seem a rather complex subject to tackle on

your own, and after dabbling for a few years I knew that I was only going to get to the next level of expertise with some guidance and tuition. I was made aware of the BRISC bursary by colleagues who have applied and so decided that this year I would apply for the funding to do a two day course in Lichen Identification at Kindrogan Field Centre in Perthshire.

I spent two fantastic days with a wonderful group of like-minded people and the brilliant tutor Rebecca Yahr. We split our time in the lab and out in the grounds at Kindrogan collecting and identifying all the



species that we could find. And there are a lot! A typical venture outside would only see us getting a couple of feet from the door, our attention caught by the number of species on a single wall or a single tree!

Time in the lab was spent looking in detail at the different characteristics of each lichen species and learning to use the equipment essential for identifying them correctly. This seemed a little daunting at first, but microscopes and spotting equipment are very easy to use once you have been shown how, and the new perspective that they give you on the different lichen species is amazing.

The new found confidence and knowledge that I have gained with Lichenology will

allow me to record and identify the lichens that I find while I am out exploring the Highlands, but it will also allow me to share this enthusiasm more effectively with others. In my work as a Countryside Ranger I hope to set up some Lichen identification and recording events and encourage other people to love lichens and record them.

They are not only a joy to discover but they are valuable indicators of air quality and a valuable habitat or source of food for other wildlife, as such it is very important that they be recorded and monitored to ensure our own quality of life, and the quality of life of the other animals that depend on them.

Love life, Love Lichens! Jo Kruk

The wonderful world of lichens has had me fascinated for many years. About a year ago I decided I wanted to delve into this mysterious world a little more, so I started to photograph these interesting organisms, with a view to begin identifying them. Whilst out exploring in Scotland however, I very quickly realised how complex and diverse lichens are.

Lichen grow everywhere in the great outdoors; at the seashore in the form of white, orange and grey paint-like "splashes"; in the moorland, where they build densely webbed antler-like structures; in woodlands where you can see bright green hairs dangling from tree branches; you will even find them in urban areas – attached to roofs and walls.

With all these glorious lichens at my fingertips, how could I not be satisfied? The problem I faced was that I didn't have any experience with specific lichen ID terminology in the field guide. Also, given

that there are more than 1,900 species of lichen in Britain alone, photographs are certainly not enough to identify them. So to advance my passion in the world of lichens, I needed to branch out and find support from lichen experts.

As part of my student placement, in 2016-2017, I worked as Operations Support with Scottish Natural Heritage (SNH) at their Creag Meagaidh National Nature Reserve. With the help of residential volunteers, I was responsible for wildlife surveying and recording on the reserve. This experience taught me the enormous value in maintaining biological recordings.

In the short time that I was researching lichen, I very quickly understood how under-recorded they are in Scotland. With this in mind, and for my own personal interest, I applied for a bursary from the Biological Recording in Scotland (BRISC)



Lichen fruiting bodies are called "jam tarts" or apothecia.

