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Scotland's Biodiversity: **Scottish Forum on Natural Capital**

A survey of over 500 Scottish Business leaders, carried out by the Scottish Forum on Natural Capital partnership with the Institute of Directors Scotland and the Institute of Chartered Accountants Scotland (ICAS), has shown that 78% of respondents feel that urgent action is necessary to protect and enhance Scotland's natural capital. The full results of the survey are available here:

<http://naturalcapitalscotland.com/article/business-leaders-believe-urgent-action-is-necessary-for-scotland-s-natural-environment/>.

The results were announced by the Scottish Government's Chief Economic Adviser, Gary Gillespie, at an event organised by the Scottish Forum on Natural Capital hosted by the University of Edinburgh Business School. The event, attended by over 100 delegates from Businesses, NGOs, academia and government, launched the Scottish Forum Project Groups. The Project Groups will be looking to develop work in five key areas with the themes of:

- ◆ Natural Capital and Scotland's Peatlands
- ◆ Natural Capital and Scotland's Green Infrastructure
- ◆ Natural Capital and Managing Scotland's land
- ◆ Natural Capital and Scotland's Seas
- ◆ Natural Capital and the Circular Economy





I Contents & Contacts

Inside this issue:

<u>Scottish Forum on Natural Capital</u>	3
<u>Tayside LBAP Projects</u>	4-5
<u>NBN Gateway</u>	6-7
<u>RSPB—new insect species in Scotland</u>	8
<u>Top 50 non-native species threat to Biodiversity in Scotland</u>	9
<u>Featured Fungus—Jelly Ear</u>	10
<u>Tayside Recorders Forum—New lichen species</u>	11
<u>Action Earth—Grab-A-Grant</u>	11
<u>Trees For Life</u>	12
<u>HLF - Funding for Scotland's wildcats</u>	13
<u>HLF – Grant for Natural networks</u>	14
<u>NTS—Conserving Rednecks</u>	15
<u>Hen Harrier Life+ Project</u>	16-17
<u>Tayside BeeWild Initiative</u>	18
<u>Glasgow 's Garden Festival</u>	19
<u>SNH—Creating a Habitat Map of Scotland</u>	20-21
<u>HWDT—Clet arrives in Scotland</u>	22-23
<u>RBGE—Cairngorm offers up its' Secrets</u>	24
<u>NTS—Things that go Bump in the night</u>	25
<u>Diary dates</u>	26

Contact details

Do you have a news story? Are you involved in a project? If so, then let the Biodiversity Team know! Ask for our article guidelines to help you make the most of your article.

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The views expressed in this newsletter are not necessarily the views of Biodiversity Scotland. The editors reserve the right to edit or exclude articles; the editors' decisions are final.

For further information about the Biodiversity Team, log on to:

www.biodiversityscotland.gov.uk



Scottish Forum on Natural Capital



Member organisations of the Scottish Forum are invited to contribute to the development of the Project Groups. Information about becoming a member and the growing list of members from the private, public and voluntary sectors and can be found at: <http://naturalcapitalscotland.com/who-is-involved/members>

The “Ask An Expert” service has been launched to increase understanding of the benefits gained from nature, highlight why it is damaged currently and help identify ways for organisations to protect and rebuild Scotland's natural capital. Members are invited to submit their questions through the website: <http://naturalcapitalscotland.com/get-involved/ask-an-expert>



The Scottish Forum on Natural Capital is an initiative bringing together public, private and voluntary sector organisations to protect and rebuild Scotland's natural capital. For further information about any aspect of the Scottish Forum's work please contact:

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Awards for Amphibians In drains Project...

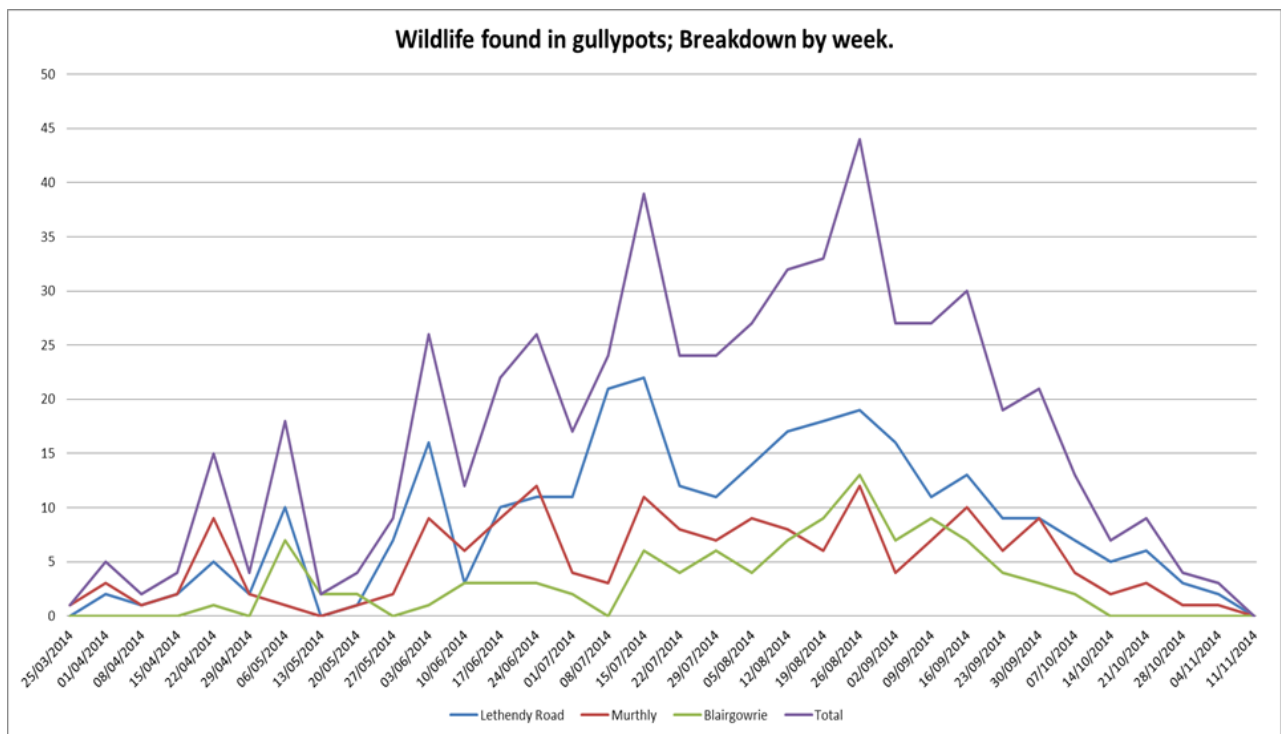
Between 2010 and 2012 Daniele Muir of the Perth & Kinross Council Ranger Service undertook the ground-breaking Amphibians in Drains project. In total, extrapolated across Perth & Kinross, the number of trapped animals per year equates to more than 47,000. This included toads, frogs, newts and small mammals. The results confirmed that newly-installed wildlife kerbs in Blairgowrie were reducing the amount of wildlife falling into gullypots. Wildlife kerbs contain a recess which allows wildlife to follow the lower edge of the kerb and bypass the gullypot. The project won several awards including a Proggy Award from PETA for providing innovative solutions to protecting wildlife from danger, an STFA Gold Award in 2013 for Promoting Sustainability and a COSLA Bronze Award in 2014 under the Strong & Sustainable Communities criteria.

Surveying recommenced in 2014 as part of a student internship project with the Tayside Biodiversity Partnership. This time the project was two-fold: to see if the wildlife kerbs installed in 2011 were making a significant difference and also to trial the potentially more cost-effective amphibian ladders. These are made with inexpensive materials and inserted into the gullypot: the slope enables any wildlife in the gullypot to climb out. The first trial ladders used jute, but as this rots quickly future ladders will trial a new material, Enkemat, made by RAVON in the Netherlands. This is more durable and appears to have a higher success rate for allowing the escape of trapped amphibians. The most recent survey involves three sites in Perthshire with more than 1,300 gullypots checked. So far results have shown the wildlife kerbs are reducing the amount of wildlife falling into the gullypots by more than half. It is too early to report on the amphibian ladders but it is hoped to continue this work into 2015 as European studies suggest these may prove to be more successful than the kerbs.



Amphibians in a gullypot – © D. Muir

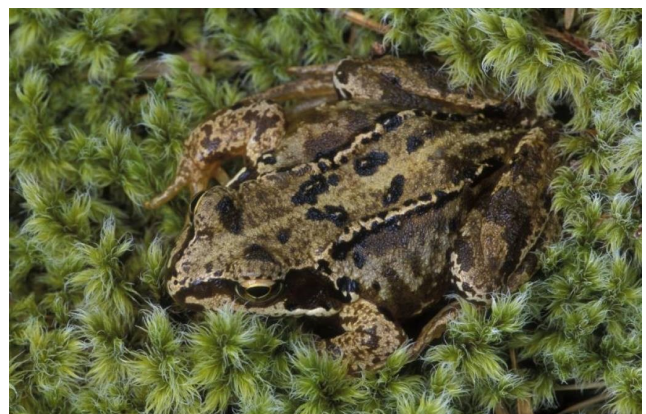
.....Tayside LBAP



Now the Partnership is turning its attention to ground-truthing the wide variety of Sustainable Urban Drainage ponds across Perth and Kinross. They are being checked for their current and potential biodiversity value, and to see if they are likely to be amphibian migration hotspots. The finds will link with the maintenance list collated by the local authority Roads Department, which in turn should assist with installing wildlife kerbs where appropriate – and at a later date, the amphibian ladders.

The project is included in the UK Biodiversity Action Reporting System (UKBARS) which ensures it is logged nationally and internationally. Volunteers from the Tayside Amphibian & Reptile Group (TayARG) are also undertaking surveys in Angus.

All the data found by this and subsequent studies will be used by Amphibian and Reptile Conservation for statistical analysis. For more detailed information, the interim report for this year's survey can be downloaded via the home page at www.taysidebiodiversity.co.uk.

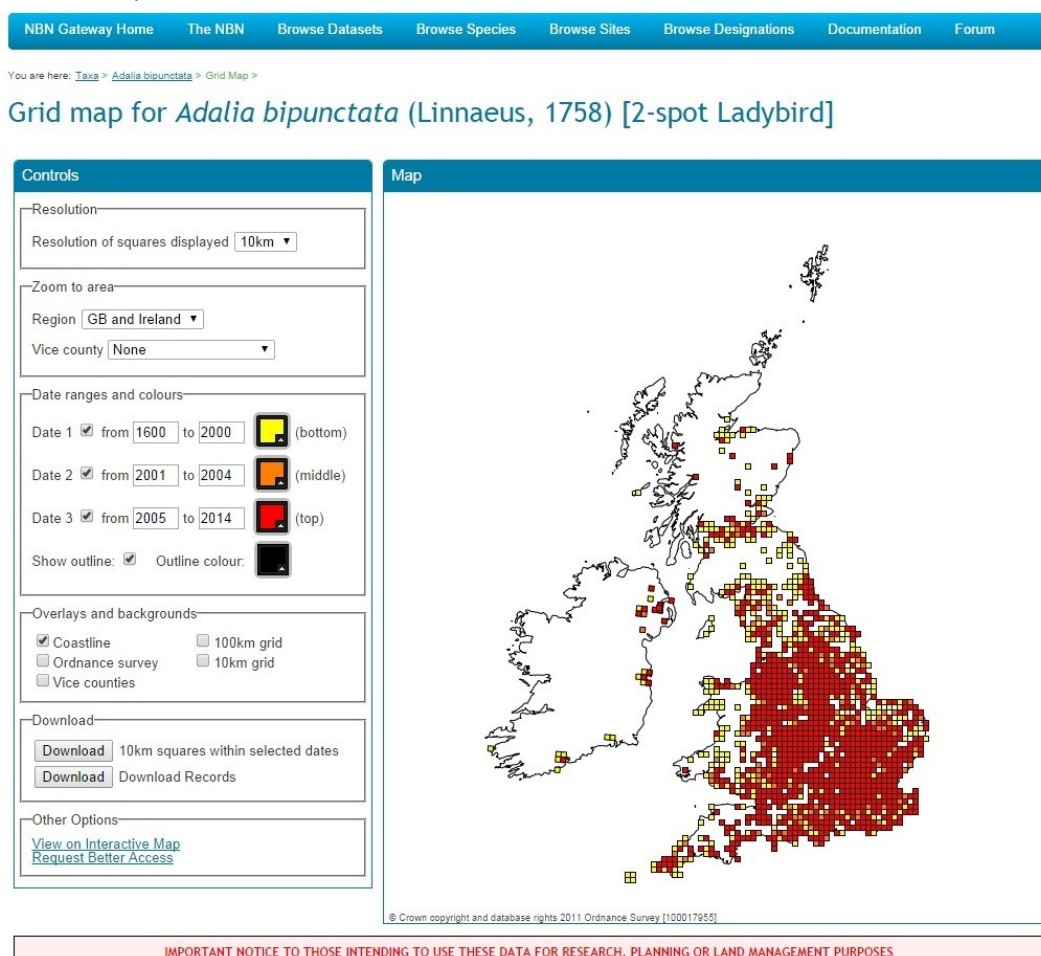


NBN Gateway...

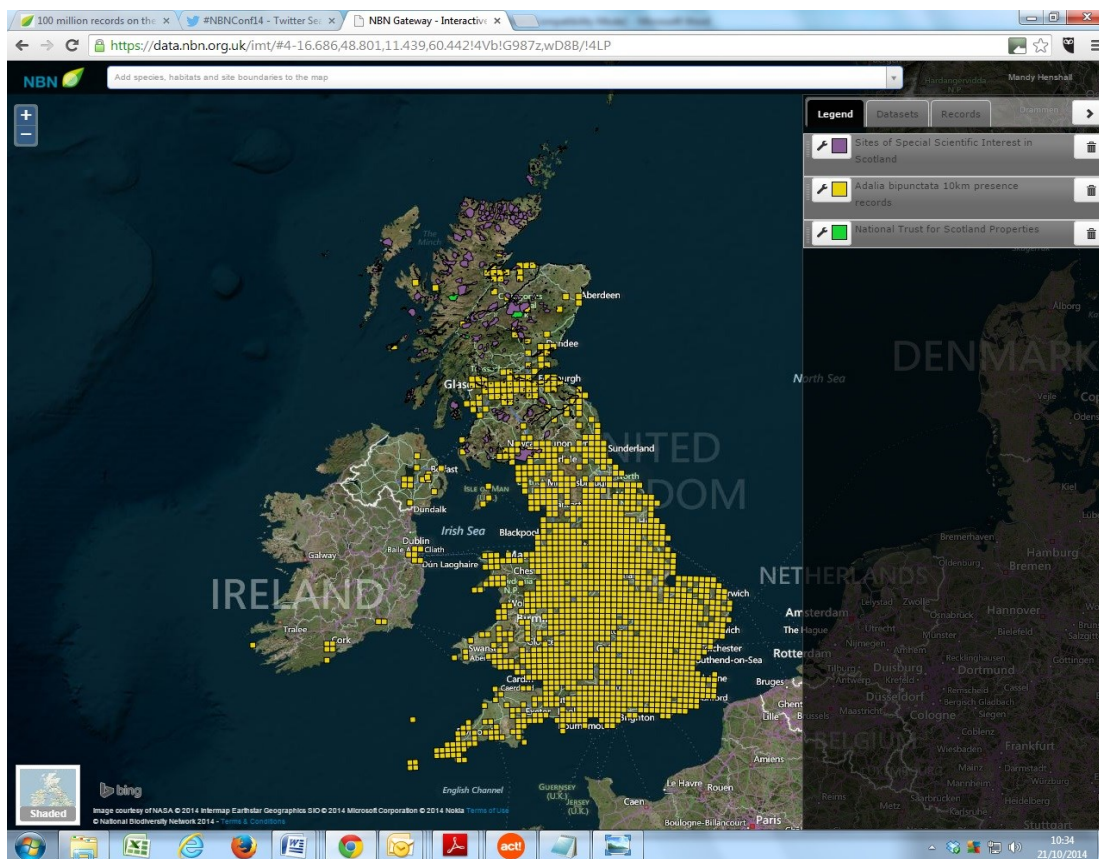
In September 2014, the 100 millionth species record was uploaded to the NBN Gateway making it one of the largest wildlife databases in the world.

The [NBN Gateway](#) has grown rapidly from its prototype beginnings when 100,000 records were available in the late 1990s, to 20 million records in 2006, 50 million in 2010 and now to a staggering 100 million species records from across the United Kingdom and the Republic of Ireland. Data comes from the dedication and commitment of amateur and professional experts and allows anyone to view species distributions and download information. The NBN recognises the significant contribution that all the data providers have made to make this fantastic milestone possible. From a Scottish perspective, many organisations have contributed data. Just a few examples are that Scottish Natural Heritage has provided 20 different species datasets (containing 285,000 records), Highland Biological Recording Group has contributed 8 datasets (containing 181,702 records), The Wildlife Information Centre has contributed 4 datasets (containing 53,133 records), The Scottish Ornithologists' Club has contributed 10 datasets (containing 263,984 records) and John Muir Trust has contributed 14 datasets (containing 6,690 records). Details on all of these and all the contributing organisations can be seen at <https://data.nbn.org.uk/Organisations>

The 100 millionth species record was *Adalia bipunctata* (2-spot ladybird) which was part of a dataset of more than 17,000 records from the National Trust's Wimpole Estate in Cambridgeshire. The species was recorded by Dr Peter Kirby, who has had a career working in nature conservation with special expertise in invertebrates. This summer, he re-discovered the very scarce tansy beetle (*Chrysolina graminis*) at Woodwalton Fen, Cambridgeshire (after a 40 year absence).



- one of the largest wildlife databases in the world



Using the NBN Gateway is free for anyone to use and search the data and there is an increasing diversity of users. These range from naturalists interested in the distribution of particular species, government agencies monitoring changes in populations of threatened or non-native species, researchers using data for analysis and, increasingly, the general public interested in the wildlife in their local area.

The maps at the end of this article show some of the simple ways in which searches can be carried out.

Some interesting facts about the 100 million records

- There are c. 44,000 species with records on the NBN Gateway.
- The most observations are for the butterfly meadow brown (*Maniola jurtina*) with 839,866 records.
- One of the oldest records on the NBN Gateway is of red deer (*Cervus elaphus*) in 1512 from Cumbria Biodiversity Data Centre vertebrate species observations for Cumbria for the period 1512 to 2011
- *Adalia bipunctata* (2-spot ladybird) has been adversely affected by the arrival of *Harmonia axyridis*, the invasive harlequin ladybird and has declined by around 40%, since its arrival in Britain in 2004.

In relation to the 100 millionth record specifically, you can see the distribution of the 2-spot ladybird on the NBN Gateway grid map. Here you can also enter different dates to see how its range has changed since the arrival of the harlequin ladybird.

https://data.nbn.org.uk/Taxa/NBNSYS0000008319/Grid_Map

A new species of flying insect has been discovered for the first time ever in Scotland on RSPB Scotland's Insh Marshes reserve. RSPB Scotland Trainee Ecologist, Genevieve Dalley discovered and identified two male individuals from a moth trap while visiting the reserve in Kingussie in search of freshwater invertebrates.



Molanna angustata is a small pale brown type of caddisfly with long antennae that lives

in lowland lakes, ditches, ponds and canals. It is fairly widespread across lowland England, up to the Lake District and Yorkshire, and in Wales. However, it has never before been found in either Ireland or Scotland, until now. This particular species has a rather complicated lifestyle. The larvae live in water, where they create a protective case to live in, out of tiny sand and stone particles, sticking them together with silk to make a tube. When they have transformed to a winged adult they chew their way out of the case and swim up to the surface where they eventually fly away. However, this does have to be done quickly or aquatic predators, like fish, will eat them.

Genevieve Dalley, Trainee Ecologist at RSPB Scotland, said: "It is fantastic to have discovered this new species, especially since it is the first ever record of its kind in Scotland. Insh is a beautiful rare habitat which has avoided much of the damage and disturbance other wetlands have succumbed to, meaning insects like this caddisfly can live out their complicated lifecycle without disturbance. However, there is still a lot of work to be done if we want to fully understand this interesting little creature. We don't know why it's never been found in Scotland before – it could be that the species is starting to move north or it could be that this type of caddisfly has simply gone unnoticed until now. There is a Scottish alter ego to *M.angustata* called *Molanna albicans*, so it is possible that some *M.angustata* have been mistaken for *M.albicans* as they look the same. It is important to know the distributions of insects like this as they can be good indicators of large scale changes in climate or habitat. It would be good now to check other sites with similar habitat to Insh to possibly fill in any gaps, although that does have a slight air of looking for a tiny brown needle in a huge haystack!"

For further information, please contact: Louise Cullen, Media & Communications Officer, on 0131 317 4136.

Top 50 non-native species with potential to threaten Biodiversity in Scotland

The Chinese mitten crab (*Eriocheir sinensis*) has been ranked as one of the top three non-native species threats to biodiversity, which are likely to arrive in Scotland in the next five years. It poses a threat because it impacts on native invertebrates in our rivers, streams and estuaries through predation and competition, and may also have an impact on salmon and trout.



Chinese mitten crab GBNNSS
© Crown Copyright 2009

A horizon scanning exercise carried out by 25 scientists from agencies, NGOs and research institutes identified the top 50 non-native species with potential to impact on biodiversity in Scotland. Some, such as muntjac deer and killer shrimp are already established in Britain, others, whilst others such as Asian Hornet have not yet arrived. Over half of the top 50 species are found in freshwater.

This list will help the relevant authorities to be vigilant for the arrival of these unwanted non-native species and put in place biosecurity measures to prevent the arrival and spread. For example, the cast skin of an adult female Chinese mitten crab was found on the River Clyde this year – we do not know whether this represents an established population or an adult that someone had released. SEPA will be stepping-up their monitoring next year and measures, such as the biosecurity risk assessment carried out for the Commonwealth Games Flotilla, can help to reduce the risk of inadvertently spreading non-native species.



Asian Clam GBNNSS © Crown Copyright 2009

The other top-ranked species, the Blood-red mysid shrimp (*Hemimysis anomala*) and the Asiatic clam (*Corbicula fluminea*), also live in freshwater. The Blood-red shrimp is representative of a group of freshwater shrimps and gobies that are heading our way from the Black Sea and Caspian Sea areas through the joined-up canal and river systems of Europe. In case you are in any doubt about the invasive impacts of the Asiatic Clam, check out this video of impacts on the River Barrow in Ireland:

<http://www.fisheriesireland.ie/Invasive-species-list/asian-clam.html>

Featured Fungus: *Auricularia auricula-judae* (Jelly ear)

The pinkish, firmly gelatinous, ear-shaped fruit bodies of this fungus are probably familiar to all of us, one of the edible species: opinions vary as to how rewarding that experience might be! This was one of only three fungi that Gerard included in his Herbal published in 1633 - it was recommended boiled in milk or steeped in beer to help soothe sore throats.

This species is a member of the diverse group of fungi the 'jelly fungi' (for their highly gelatinised flesh) and is one of the heterobasidiomycetes - a group with segmented or strangely shaped basidia. In the genus *Auricularia*, the basidia are cylindrical structures with three cross walls and what are called epibasidia growing from the sides and supporting the spores. Well worth trying to find one of these, although any of you who have tried to work with jelly fungi will know about the joys of trying to keep the specimen under the cover slip when squashing!



Like many of the jelly fungi, this species shrivels up in dry weather, so you are much more likely to spot some on a cool, damp day. Amazingly, many of these fungi, including *Auricularia* are able to rehydrate and then continue to release spores. Individual fruit bodies can thus last for many months coming and going with the rain

Fructing:

Auricularia auricula-judae has been found in every month of the year in Scotland. Interestingly if you look at the months that it has been recorded in for England and Wales there are two distinct peaks - in

April and May and again in September, October and November. In Scotland, the autumn fruiting peak is less obvious with elevated occurrence in September and October and most records evenly spread from January until May

Habitat:

Auricularia is a genus of wood rotting species, possibly weakly parasitic, usually found in damp broadleaved woodlands with plenty of dead wood. *A. auricula-judae* fruits on deciduous trees and shrubs and exhibits a particular preference for elder (*Sambucus nigra*). It is this latter preference that led to its naming - the ear reference '*auricula*' is obvious from the shape of the fruiting structure but '*judae*' has arisen from the story that Judas Iscariot hung himself from an elder tree, after his betrayal of Jesus Christ. For many years this led to the common name of 'Jew's Ear' which the English Name project was unhappy with. Although Liz Holden personally thinks that 'Judas Ear' would have avoided any unwanted overtones without loss of the story, Jelly Ear was the name finally recommended.



© Liz Holden

Tayside recorders Forum—New Lichen Species for Scotland (Green Graveyard Initiative)



A recent churchyard survey in the Carse of Gowrie has unearthed two species new to Britain. The first was the tiny crustose lichen *Lecanora invadens* with 'jam tart' like spore producing bodies (apothecia). The second was the lichen parasite *Sclerococcum tephromelarum* found growing on the black shields lichen *Tephromela atra*. Lichens are part-fungi and part-algae and sometimes have their own specific fungal parasites. Deciphering

these species has been a lifetime's work for the discoverer of the two new species, lichenologist Dr Brian Coppins. He was part of the Scottish Churchyard Lichen Group, led by John Douglass, surveying the churchyards for Perth & Kinross Council.

Action Earth– Grab a Grant

CSV's Action Earth campaign is helping to get people and communities busy outdoors. We have grants to give to groups of volunteers who are carrying out environmental projects in Scotland. The campaign runs until February 2015

Grants from £50 to £250 are available for practical activities that involve volunteers in improving outdoor spaces or creating habitats for wildlife. Grants can be used to purchase plants, tools and materials or to cover volunteer expenses.

If your group is volunteering on a Local Nature Reserve we can give you up to £500 for practical work, wildlife recording or educational activities that encourage more people onto the reserve.

If you have any questions contact Robert Henderson at actionearth@csv.org.uk or call 0131 222 9083 / 622 7766.

For more information and to apply online go to: <http://actionearth.csv.org.uk>

This project is supported by Scottish Natural Heritage



Plans to protect and restore one of Scotland's most iconic and beautiful glens – alongside wildlife such as golden eagles, Scottish wildcats and red squirrels – received a double boost last week when charity Trees for Life won funding of almost £80,000 for new forest conservation projects in Glen Affric near Loch Ness. The initiatives will involve the planting of 20,000 trees, opportunities for hundreds of people from diverse backgrounds to gain health benefits and conservation training, and the creation of an eco-friendly wilderness base at a remote mountain bothy.

Shona Robison – Scottish Government Cabinet Secretary for Commonwealth Games and Sport – announced on Thursday 9 October that Trees for Life will receive £60,000 from the Legacy 2014 Active Places Fund towards the renovation of the Athnamulloch Bothy, which lies to the west of Loch Affric on the National Forest Estate. The news came just three days after Trees for Life's Glen Affric Landscape Project secured almost £20,000 from the prestigious European Outdoor Conservation Association, following an online public vote in which more than 4,200 people voted for the conservation charity. "Securing two major funding awards within a week for our conservation initiatives is fantastic news for the ancient Caledonian Forest and its rare species, many of which are staring extinction in the face – and for the hundreds of people who will directly benefit from these reforestation project. Our sincere thanks go to everyone who voted for us in the European Outdoor Conservation Association awards, and to Northshots Photography for nominating us. The award is wonderful news for one of Scotland's finest wilderness forests, and it will ensure further practical action takes place to reverse centuries of forest loss in the Highlands, said Alan Watson Featherstone, Trees for Life's Executive Director.

In partnership with Forestry Commission Scotland, Trees for Life's Athnamulloch Bothy Renovation Project aims to renovate this derelict mountain bothy, creating a warm, weather-tight and eco-friendly wilderness base. Trees for Life has secured a 25-year lease of the building – located far from normal services – which will be completely refurbished and equipped with ecologically-sound solutions for the on-site provision of water supply, energy and sewerage. The Legacy 2014 Active Places Fund grant – part of the Scottish Government's

Commonwealth Games Legacy 2014 programme and administered by **sportScotland** – will cover almost half of the bothy renovation costs. Trees for Life plans to raise funds for the remaining costs through a public appeal and further grants.



HLF funding to help save Scotland's Wildcats



Once numerous across the whole of mainland Britain, the Scottish wildcat is now restricted to northern Scotland and is in grave danger of becoming extinct unless action is taken to conserve it. Today the Heritage Lottery Fund (HLF) awarded a grant of £973,100 to a project which aims to reverse the decline.

Eight organisations including Scottish Natural Heritage, the Scottish Wildlife Trust, the Royal Zoological Society and the Royal (Dick) Vet School have formed a partnership to address the threats to the species - the main ones being interbreeding with domestic or feral cats and the risk of disease.

They will provide training in wildcat surveys and wildcat-friendly land management practices, and will involve schools, volunteers and community projects in learning about wildcats, and responsible domestic cat ownership. The work will also co-ordinate neutering and vaccination of feral cats and will monitor the wild-living cat populations through an extensive network of trail cameras.

Commenting on the announcement, Colin McLean, Head of the Heritage Lottery Fund in Scotland, said:

“We have some incredible native wildlife in Scotland but our species and habitats are under constant threat. We are delighted to see such a strong partnership working together for the good of this iconic Scottish species. We hope that with the Heritage Lottery Fund grant announced today, communities across the country will be inspired and empowered to safeguard the existence of these rare creatures”.

Heritage Lottery Fund—Grant for Natural Networks

The Conservation Volunteers have received a grant of £725,200 from the Heritage Lottery Fund (HLF) for their Natural Networks project.

Launched in Autumn 2014, the project aims to develop skills to facilitate the 'green network' of sites considered essential for the effective conservation of biodiversity, creating a UK wide web of expertise in managing and engaging people in ecological networks.



Photo © Graham Burns, The Conservation Volunteers



The project will develop the skills of 32 trainees over two years and help hundreds of communities across the UK to understand, value, protect and increase the biodiversity of their local green places.

The first group of 15 people with a passion for environmental conservation and engaging communities have now been recruited and will begin gaining practical experience, skills and knowledge with The Conservation Volunteers and/or a range of local authority and environmental sector partners at locations around the UK in January 2015. Five are based in Scotland, eight in England and two in Northern Ireland. In Scotland, the trainees are helping local people to “join in, feel good” at green spaces across the North East, North Lanarkshire, Edinburgh, Cumbernauld and North Ayrshire. Each receives a non-taxable bursary of £11,900.

Colin McLean, Head of the Heritage Lottery Fund (HLF) in Scotland, said: “Our natural heritage is one of our greatest national assets. Through supporting these work-based placements, we are not only giving people the experience and skills to pursue a career in its conservation but also

helping communities across the UK to understand, value, and protect the biodiversity on their doorstep. It is no surprise that our Skills for the Future programme is extremely popular and we congratulate The Conservation Volunteers for developing a project which is sure to ignite a passion for our natural world in communities across the country.”

For further information, contact:
a.morrow@tcv.org.uk



Photo: ©The Conservation Volunteers Skelton Project



NTS—Conserving red-necks

The red-necked phalarope is one of the rarest and most unusual birds that breed in the Northern and Western extremes of the British Isles. The National Trust for Scotland is working in partnership with RSPB Scotland to carry out conservation work to help these enigmatic waders on part of the NTS land holdings.

These beautiful waders break many of the rules; the males carry out the role of incubating the eggs and rearing the chicks, whilst the vividly coloured females are more promiscuous! Populations of the birds have fluctuated over the years between 15 and 50 UK nesting males in Shetland and the Western Isles, and they have specific habitat requirements in order to survive and breed successfully. The RSPB Scotland already have a good understanding of the birds and are carrying out a two year tagging programme to establish their migratory movements. The first bird to be tracked with the tiny geo-locator, has revealed the bird made an astounding 16,000 mile journey to wintering grounds in the Eastern Pacific. Previously, it was thought that the Scottish population joined the Scandinavian wintering birds in the Arabian Sea.

Rob Dewar, Nature Conservation Advisor for the NTS, stated - "The NTS is about conservation work. We have a wide remit and nature conservation is very important to us. We welcome the opportunity to work with the RSPB; they have a lot of experience and we share the same aims to improve the welfare of wildlife. The red-necked phalaropes prefer a mosaic of wetland habitat and this management work has helped to improve these conditions by raising water levels and adding pools of open water. The phalaropes are wonderful birds and we are looking forward to some positive results following this conservation work."



Hen harrier LIFE + Project

The first cross-border project has been launched to save a rare bird of prey

An exciting new European Union supported project has been launched by the RSPB that aims to achieve a secure and sustainable future for one of the UK's most threatened, beautiful and spectacular birds of prey, the hen harrier.

Focusing on seven Special Protection Areas (SPAs) designated for breeding hen harriers in southern and eastern Scotland and northern England, the European-funded Hen Harrier LIFE+ Project is an ambitious five-year programme of direct conservation action and community engagement.

The project is unique in being the first truly cross-border, joint Scottish-English initiative for this species. Scotland currently holds the bulk of the UK breeding population of this species, mostly on Orkney, the Hebrides and parts of the western mainland.

The hen harrier used to be a widespread and familiar bird in the uplands of Britain. However by 1900, Victorian persecution by game preservers and skin and egg collectors had pushed this bird of prey to extinction as a breeding species on the British mainland.

Although the hen harrier has clawed back some of its lost ground, its diet of birds and small mammals, includes red grouse, thereby bringing the species into conflict with man, despite special legal protection. This is especially true in parts of southern, central and eastern Scotland and northern England where land management for driven grouse shooting is most intensive.





Between 2004 and 2010 there was a 20% decline in hen harriers across Scotland, according to the National Hen Harrier Survey. Whilst this year was good for hen harrier productivity in places such as Langholm Moor Demonstration Project where 46 young were fledged from 10 successful nests, largely due to high vole numbers, hen harriers continue to face serious threats. For example, in June this year two orphaned hen harrier chicks had to be hand reared by wildlife experts after the female bird was illegally shot in East Ayrshire.

Blánaid Denman, manager of the Hen Harrier LIFE+ Project, said: “Hen harriers are in dire straits. Numbers are declining dramatically and urgent action is needed, which is why this European Union-funded project is both welcome and timely. The cross-border project provides a huge boost to our efforts to monitor and protect hen harriers. Working together with volunteers and other organisations, we’ll have more eyes and ears on the hills than ever before, using satellite tagging, winter roost monitoring and nest protection to deter persecution, identify the important areas for these birds and highlight where they’re most at risk. Building on the success of our award-winning Skydancer Project in England this new project will enable us to share the stories of these remarkable birds with a wider audience than ever before.”

Professor Des Thompson, Principal Adviser on Biodiversity in Scottish Natural Heritage, commented: “In parts of the UK the state of the hen harrier population is perilous. This collaborative project offers a lifeline in securing key evidence on what is working well and badly for these birds.”

The Hen Harrier LIFE+ Project also aims to work progressively with landowners and the shooting community, championing best practice where it occurs. It will link up and support the work of the Langholm Moor Demonstration Project and the PAWS Raptor Group “Heads Up for Hen Harriers” project, which includes Scottish Government, Scottish Natural Heritage, conservation and landowning interests.

For further information and to arrange an interview, please contact:

Louise Cullen, Media and Communications Officer on 0131 3174136



Tayside BeeWild Initiative

First envisaged as a means to raise awareness of urban pollinators and the need to manage greenspace with them in mind, the Tayside BeeWild project is beginning to focus advice on a variety of businesses and services.

During 2014, the Tayside Biodiversity Co-ordinator gave a number of workshops on the subject, including to members of Volunteer Action Angus, the Trellis national conference and a private care home company which sent its managers from all over eastern Scotland to Perth for an after-noon workshop. A simple Site Biodiversity Action Plan template is being drawn up so that businesses and care homes can plan how to manage their surrounding ground or greenspace.

News is awaited of a funding application to roll out the project to 11 private care homes in Angus (with the lead partner being Volunteer Action Angus). If successful, it is planned to widen the project in the future to include Perth & Kinross. This project includes a choice of different "biodiversity kits" so that care homes and day care centres can pick and choose what is relevant to them. Some will want to make a pond and include native plants that will encourage wetland invertebrates, others will have room to plant an orchard with wildflower plantings beneath to encourage bumblebees and butterflies, whilst others will concentrate on making their patio plantings wildlife-friendly. The funding will incorporate binoculars, ID charts and books, bird tables and nest boxes for the staff, residents and relatives to enjoy, as well as advice on how to make sensory raised beds, wildlife-friendly window boxes and tubs. Currently, funding is being sought to update and republish the Partnership's booklet "Biodiversity in Community Gardens, Orchards and Allotment"; in the meantime it can still be downloaded via the TBP's web-site: <http://www.taysidebiodiversity.co.uk/News/PDFs/BiodiversityCommunityGardens.pdf>



Elsewhere SEPA is liaising with property owners on the Kirkton Industrial Estate, Arbroath, to set up a wide-ranging BeeWild project which includes native tree planting and advice on grassland management, all for the good of urban pollinators. The Tayside Biodiversity Partnership has provided an

information pack to all those businesses taking part. There are plans to publicise the business's achievements to encourage other business parks and industrial estates to join in. Further details are available from Catherine Lloyd at : cagllloyd@pkc.gov.uk.

Glasgow Garden Festival Project

Across Glasgow, local people have been working together to protect, enhance & enjoy the green spaces around them and these community groups are at the heart of RPSB's 'Giving Nature a Home in Glasgow' project. Together we are sharing expertise, man power, tools and enthusiasm to link up all the groups across Glasgow and create a city that is a haven for wildlife.



As part of this fantastic project, we ran the Glasgow Garden Festival for 3 weeks in September. This involved 21 groups, over 20 sites and almost 50 separate events which helped to engage over 2000 Glaswegians in the urban biodiversity that surrounds them. As well as bringing together & showcasing the great work being carried out by our city's community organisations. From Kelvingrove to Shettleston, Toryglen to the Gorbals; the citywide scope of this festival helped provide a wide array of fascinating greenspaces and plenty of fun activities for all!

As part of Glasgow Year of Green 2015, we will be running the festival again, only this time in July (the month of biodiversity). This time round we want to make it bigger, better & busier! So if you like the outdoors and live in Glasgow...or even if you're just visiting, keep your eyes

peeled for the Glasgow Garden Festival 2015! Coming to a Green-space near you!

For more information regarding the festival, please visit www.rspb.org.uk/gnahglasgow.

Know a community group who would like to be involved? Contact paul.gunn@rspb.org.uk



SNH—Creating a Habitat map of Scotland

What is it?

The Habitat Map of Scotland will be a publicly available GIS-based map, displaying habitat information for all land and freshwaters in Scotland. Alongside the [UK SeaMap](#), it will create a complete picture of all of Scotland's habitats.

Why do we need it?

The map will fulfil a wide range of statutory, policy, operational and educational needs. Importantly, it will help us to:

Monitor - Habitats of European importance (those listed in [Annex I of the Habitats Directive](#)) will be mapped, providing essential information to support monitoring and assessment of their condition. Our knowledge of these habitats outwith designated sites has previously been very poor.

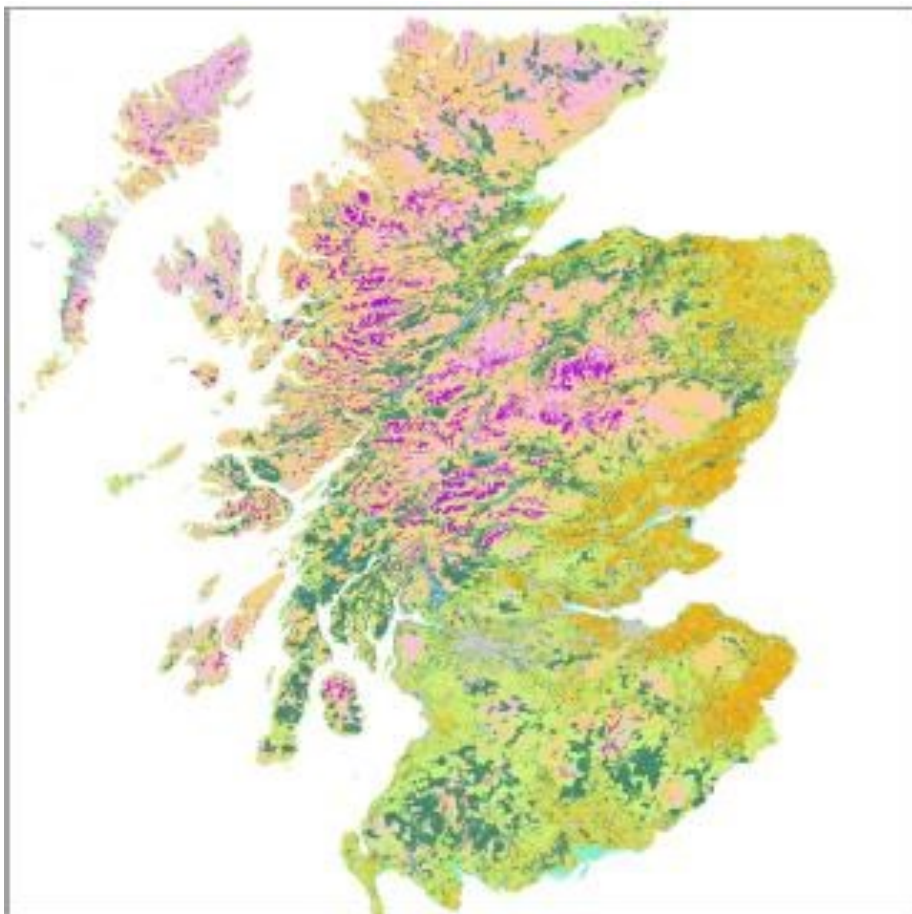
Manage - A comprehensive inventory of Scotland's habitats will enable better targeting of management action, ensuring that habitat protection and enhancement measures are directed effectively. The map will guide preparation and assessment of land management proposals, including planning applications and measures under SRDP.

Share - The map will be available on the internet for public use. All habitats will be categorised using the European Nature Information System ([EUNIS](#)) habitat classification, making Scottish data comparable across Europe. In doing this we are meeting the requirements of the European Union [INSPIRE](#) Directive.



How are we doing it?

The map will make best use of existing habitat data, which was created under a variety of classification systems and requires translation. To support this work, a new manual has been developed which describes EUNIS and Annex I habitats as they occur in Scotland and provides translation tables between different classifications. For areas not covered by existing data, we are using a variety of methods to fill the gaps, including field survey and aerial imagery. Although we are leading on this work, it is a unique multi-partner project involving government agencies, NGOs and the private sector.



What progress has been made?

The project has gathered habitat data covering almost half of Scotland's land area and this is currently being translated and uploaded. Most of our coastal and woodland habitats have now been mapped and work on freshwater, lowland and uplands is underway. We are also trialling methods to rapidly map previously un-surveyed areas, including an exciting pilot in the uplands using stereo colour infrared aerial photography.

When will it be available?

We plan to release data in phases as we complete survey for particular habitats or geographical areas. The aim is to have a completed map by 2019, to coincide with the next Habitats Directive reporting round and 2020 biodiversity assessment. Look out for updates on progress and notifications about available data through Update and the project intranet page <http://www.snh.gov.uk/about-scotlands-nature/habitat-map-of-scotland/>

Who is delivering it?

The map is being delivered by SNH's Surveillance Team, part of the Knowledge and Information Management Unit, with support from a range of habitat and mapping specialists. For further details, please contact HABMOS@snh.gov.uk

HWDT - Internationally famous solitary dolphin ...



A solitary bottlenose dolphin that appeared in Scotland's Sound of Mull this week is an internationally famous individual known as Clet – who after becoming a celebrity in France and Ireland has now been recorded in Scotland for the first time, say researchers at Hebridean Whale and Dolphin Trust. The rare sighting of a lone bottlenose dolphin following a ferry between Oban and the Isle of Mull on Tuesday 2 December triggered some rapid detective work at the conservation charity. Bottlenose dolphins are not unusual in the Hebrides, even during winter – but the normally social species usually occurs in small groups, with individuals rarely seen alone

By using photo identification techniques – studying the dolphin's distinctively scarred dorsal fin – the trust's experts identified the animal as a renowned individual that made international headlines through its unusual behaviour when last seen in September – in Galway in Ireland, some 600 kilometres away from the Sound of Mull.

“To our knowledge, this is the first time that Clet has been recorded in Scotland, and in fact this is the furthest

north he has been recorded to date. Bottlenose dolphins are usually considered to be resident to certain areas, so long-distance international movements such as this challenge our understanding of this species, and also challenge our ability to protect them using Marine Protected Areas alone.” said Dr Conor Ryan, Sightings Officer at Hebridean Whale and Dolphin Trust.

The male dolphin was named by locals from Cap Sizun, Brittany in France, where he used to follow fishing boats between 2008 and 2010. He then travelled to Cornwall, Devon and Wales before appearing in West Cork in Ireland, where he spent several weeks interacting with boats. The Irish Whale and Dolphin Group then recorded his movements along Ireland's west coast to Valentia, County Kerry. The last recorded sighting of Clet was on 28 September 2014 at Inis Óirr off Galway Bay. Although not confirmed, he was thought to be responsible for a dolphin attack on a group of swimmers in Salthill, Galway. The RNLi ensured that the swimmers were able to get to shore without harm, but unfortunately the incident resulted in some sensational news headlines.

...seen in Scotland for first time

Pádraig Whooley, Sightings Officer for the Irish Whale and Dolphin Group, said: “We think it’s remarkable that Clet’s movements can be tracked to the Irish south and west coasts from France via English and Welsh waters, using images from the general public. The addition of Scotland after a two month interval brings his known tally of passport stamps to five countries and counting, and shows the need for international collaboration when trying to monitor these highly mobile marine mammals.”

Solitary dolphins such as Clet do not pose a threat to people in boats, but can be aggressive towards swimmers. The biggest danger to solitary dolphins is injury from boats, as the animals appear to seek out vessels to interact with. The deep gash on Clet’s dorsal fin may be from coming too close to boat propellers.

Wildlife photographer Nic Davies, who recorded Clet close to shore from Craignure on the Isle of Mull this week, said: “I was out photographing otters when I heard a loud blow sound just out from the shore, and then I spotted the dolphin heading at speed towards a departing ferry.”

Clet may remain in the Sound of Mull area for weeks or even months, as he has done in other areas. Hebridean Whale and Dolphin Trust is asking boat owners to be respectful and to give Clet the space he needs, and hopes that the dolphin will continue to enthrall onlookers from the shore and from the ferries, which he has been bow riding in the Sound of Mull.

Hebridean Whale and Dolphin Trust is asking the public to report sightings of whales, dolphins and porpoises – collectively known as cetaceans – and basking sharks at www.hwdt.org. The charity’s extensive Community Sightings Network uses such sightings as a key way of strengthening understanding of the local marine environment and of these spectacular animals.

High quality images of cetaceans and basking sharks can be emailed to the trust at sightings@hwdt.org. This helps in photo identification research – a technique that allows individual cetaceans or basking sharks to be identified by their distinctive markings, often shedding new light on population sizes, social dynamics, and areas of important habitat.

Volunteers are also wanted to join the trust’s research expeditions on its specialized yacht Silurian next summer, working alongside marine scientists.



The bottlenose dolphin is a highly protected species under EU law, and the Hebrides marks the most northerly reaches of their geographical range. Some of the biggest bottlenose dolphins in the world have been recorded in Scotland, where individuals usually grow to 3.5 metres in length. Over 70 individuals have been catalogued in western Scotland.

Both photographs by kind permission of Nic Davies

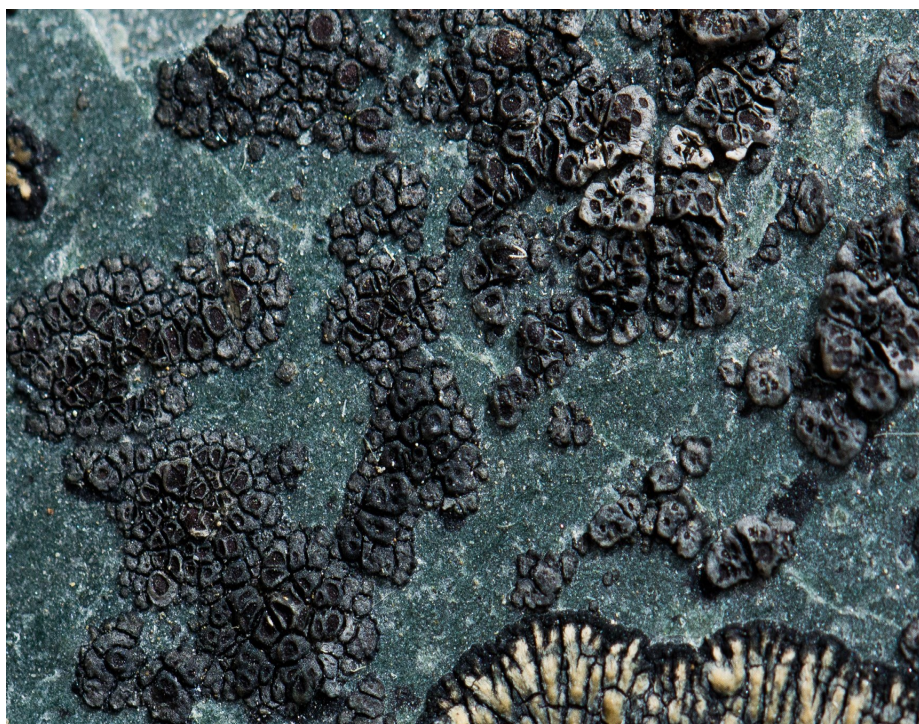
RBGE— Cairngorms offer up Botanical Secrets

Two striking discoveries in the Cairngorms National Park have served to underscore the need for increased research into Britain's extensive – but often overlooked - communities of lichens. The call comes after Dr Rebecca Yahr, a Lichen Biodiversity Scientist at the Royal Botanic Garden Edinburgh (RBGE), uncovered two tiny botanical gems clinging unnoticed in one of the country's most heavily documented mountain regions. Now, the quest is on to discover how many more scientific surprises are waiting to be found, right under our feet.

"These finds are significant to British research work", said Dr Yahr. "The first, *Bellemerea alpina* hadn't been seen in Britain for more than 30 years, despite attempts by expert lichenologists. Things weren't looking promising. Now we have a confirmation that this species still occurs in Britain, with a site clearly located, it becomes a going concern for UK conservation. The second, *Sporastatia testudinea* is also rare. There are only two previous records of the species in Scotland, only one of which has any associated detailed locality or date information, and very little is known about its ecology. Together, these finds highlight the need for individuals and partnerships – professionals, such as RBGE and Scottish Natural Heritage (SNH), often working with experienced amateurs – to develop their research around the country."

While lichens are hugely important to science - for example, as pollution indicators - there are challenges in their study. Not actually part of the plant kingdom at all, they are made up of two or more closely interacting organisms: a fungus and one or more partners known as photobionts. Being a specialist area of research they have often struggled to get their fair share of attention or funding. As a result, less research has been undertaken in this area than in more mainstream botany. Therefore, much less is known about the distribution, and ecology and British conservation is hampered.

"In light of what we discovered, there is new impetus to find what else has so far been missed", added Dr Yahr. "It is very early days in terms of montane lichen work, but it's looking extremely promising. Working in partnerships to provide inventories, along with taxonomic surveys and monitoring of known sites will help us understand far better the diversity of the Cairngorms and other parts of Scotland".



Echoing Dr Yahr's sentiments, David Genney, of SNH concluded: "Finding these species demonstrates how much we still have to discover in the Scottish mountains. These discoveries also come at a time when there are uncertainties as to how species will respond to climate change, so further research and survey in our uplands is as important as ever. SNH and RBGE will continue to work together to maintain and build the evidence and skills we need to protect these valuable species."

NTS— Swallows and things that go bump in the night

Staff at the National Trust for Scotland's 700 year-old Drum Castle have been left scratching their heads at a mysterious image captured by a webcam.

The conservation charity's wildlife team had set up cameras in the castle's stables over the summer as part of a project to observe a nesting family of swallows. However, staff based at the Aberdeenshire castle discovered that they had captured more than they bargained for when checking photographs taken overnight. A strange mist can be seen in one of the images. The webcam is motion-activated, so something with a physical presence must have triggered the camera to take the picture. Whatever the strange mist was, staff are certain it was not caused by a swallow or an insect.

Dr Alison Burke, the National Trust for Scotland's Property Manager at Drum Castle said:

"Everyone tells me that Drum Castle is a haunted place and that there are strange happenings here. I have always been highly sceptical but there have been too many inexplicable events that cannot be ignored. I have to admit, when I checked the camera and found this image a cold shiver ran down my spine."

The old stables are regarded by staff and volunteers as having a fairly odd atmosphere. It is here and in the adjacent garden that people have reported hearing two women laughing together despite no-one being present.

Drum Castle, which is near Banchory, has a very long history and over the years a number of strange goings on have been reported in different parts of the building and its surrounding estate. These have included sightings of a female figure believed to be Anna Forbes, wife of the 20th Laird. Heavy footsteps have also been heard in the stone-floored corridor. In the Chintz Bedroom, which is reportedly very cold, linen and items in the dresser have been moved when no-one had access to the room.



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KeepGuard

Diary Dates

18th February 2015—Natural Environment 2015 Conference. **Natural Environment: Value and Restore** The Mermaid Conference & Events Centre, London . For further information:
<http://www.naturalenvironmentconference.co.uk/programme>

24th-25th February 2015—Low Carbon Scotland - Meeting the Emissions Reduction Targets. Venue: Our Dynamic Earth, Edinburgh. For further information: <https://www.eventbrite.co.uk/e/low-carbon-scotland-meeting-the-emissions-reduction-targets-tickets-13457675269>

3-5 March 2015 - Upland Biodiversity Conference . An Integrated Approach to Upland Biodiversity conservation' Venue: Halifax Yorks For further information www.moorsforthefuture.org.uk/moorlife-final-conference

28th March 2015—International Beaver Conference, Birnam Institute For further information: <http://www.taysidebiodiversity.co.uk/>

26-27 November 2015—World Forum on Natural Capital in Edinburgh. For more information: <http://www.naturalcapitalforum.com/about>

The Biodiversity team would like to take the opportunity to wish our readers a Happy and 'Biodiverse' 2015.

A big thank you to all those who contributed items for the newsletter in 2015—please keep doing so.

We would also encourage others to send in articles—large or small—for next year.