Scottish Invertebrate News

Volume 4 Issue 2 November 2013

Welcome to the eighth issue of Scottish Invertebrate News!

It's been a great summer for many Scottish invertebrates this year with increased records of butterflies and bees following the warm summer.

Hopefully you've all managed to enjoy the outdoors over the past few months and have seen some of the exciting bugs and beasties Scotland has to offer.

This issue covers exciting new insect discoveries to Scotland, plus new finds from Glasgow's buzzing's second year of project work and Scottish brownfield invertebrate surveys. Articles on the MSP Species Champion initiative and endangered fresh water mussels also feature.

Scotland abuzz with new arrivals!

Buglife Entomologist, Steven Falk, managed several trips to Scotland this year partly through Buglife work but also two family holidays based in the Aviemore area. The emphasis was on photographing iconic species in iconic places rather than detailed inventory surveys. However, it is amazing what can turn up, even with this less intense approach. In June Steven visited the Ardeer Peninsula in Ayrshire with Buglife colleagues and volunteers, a keen squad of Scottish Wildlife Trust (SWT) trainees and local recorder Iain Hamlin. The initial highlight was seeing a good population of Britain's rarest leafcutter bee, *Megachile circumcincta*, one of the few British bees Steven had not seen. The recording of the Hairy-footed flower-bee (*Anthophora plumipes*) and Maritime leafcutter (*Megachile maritima*) seemed relatively unremarkable to a southern entomologist, until Iain pointed out that they may not actually be known from Scotland! Mike Edwards of the Bees Wasps & Ants Recording Society (BWARS) kindly confirmed that they were indeed new to the Scottish list.

Hairy-footed flower bee (*Anthophora plumipes*) © Steven Falk

August saw Steven in the Spey Valley for the second time with family, and was keen to check out the lovely wetland area at the north end of Loch Insh near Kincraig. Lots of insects were being attracted by stands of...

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Scottish Invertebrate discoveries

Creeping thistle (*Cirsium arvense*), and amongst numerous workers of the Tree wasp (*Dolichovespula sylvestris*), was one worker that Steven recognised as a Saxon wasp (*D. saxonica*), a wasp that was added to the British list in 1984 and has been spreading north ever since. The specimen was taken to be sure of its identity, and confirmed as new to Scotland well north of any previous known record.

Saxon Wasp (*Dolichovespula saxonica*)
© Steven Falk

As well as these exciting and unexpected records, Steven did really well in photographing iconic species in often stunning habitats. This included the Aspen hoverfly (*Hammerschmidtia ferruginea*), Pine hoverfly (*Blera fallax*), Pine mason bee (*Osmia uncinata*), Bumblebee robberfly (*Laphria flava*), Broken-banded bumblebee (*Bombus soroeensis*), Cuckoo wasp (*Vespula austriaca*), Ribbed pine-borer (*Rhagium inquisitor*) and Northern rose-chafer (*Protaetia metallica*).

Maritime leafcutter (*Megachile maritima*)
© Steven Falk

You can see photos of all the species mentioned here (and their habitats) on Steven's Flickr site (www.flickr.com/people/63075200@N07/)– simply search on 'Steven Falk Flickr Collections' and drill down the various folders.

Steven Falk, Buglife

iSpot, You Spot, We all spot together

www.ispot.org.uk is the place to learn more about wildlife and to share your interest in a friendly community. iSpot, developed by The Open University, allows you to upload photos of your observations and get help identifying what you have seen.

It's perfect for help with identifying a particular type of ladybird, beetle or bee and iSpot can be used as an aid to educating children and adults alike. Just make sure you have a camera with you and then at home, the office or school, the photos can be uploaded on to iSpot.

Once you register on iSpot you can gain points by helping others with their identifications as well as suggesting your own and as your reputation grows you'll receive online badges. There are also forums for discussions broken down by wildlife type, location and interest groups. iSpot is your place to share nature. What have you spotted today?

For more information or free training on how to get the most out of iSpot, please contact iSpot Biodiversity Mentor for Scotland, Emma Kemp at emma.kemp@open.ac.uk

iSpot is part of The OpenScience Laboratory.

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Emma Kemp, *iSpot*

Scottish Invertebrate discoveries

New bumblebee for Scotland!

Back in June 2013, the Bumblebee Conservation Trust (BBCT) office was a-buzz with excitement when one of its members reported a Tree bumblebee (*Bombus hypnorum*) sighting in Lennoxtown, East Dunbartonshire.

The Tree bumblebee arrived in England in 2001

Common carder bumblebee (*Bombus pascuorum*) © Steven Falk

from mainland Europe and has been gradually making its way north ever since. Its arrival in Scotland had been expected in 2012, however no records were confirmed and, until this record, all submissions in 2013 had turned out to be the Common carder bumblebee (*Bombus pascuorum*).

The Tree bumblebee differs in appearance from the Common carder, which are usually gingery brown, and never have a white tail. The Tree bumblebee on the other hand has a gingery brown thorax, a black abdomen and white tail – it is quite distinctive.

David Taylor, who submitted the record to BBCT says: "We've been keeping track of the bumblebees in our garden for a number of years. So when we first saw this bumblebee on our cotoneaster, we knew it was different, and immediately got out our bumblebee chart to check. We then tried to get a photo, but the bees are very active and very wary, so had to get help from our daughter, Claire, who eventually succeeded in getting a clear shot."

Stuart Roberts from the Bees, Wasps and Ants

Tree bumblebee (*Bombus hypnorum)* © Claire Taylor (note the white tail)

Recording Society (BWARS), who runs the Tree bumblebee mapping project, added: "After a long wait, we are thrilled to know that the Tree bumblebee has finally arrived in Scotland. The record shows just how important public involvement can be in tracking and monitoring the changing fortunes of our precious bees."

Now that the Tree bumblebee has arrived in Scotland, BBCT is keen to track its spread. So, if you spot one in your area, please take a photo and upload it for free to BeeWatch, BBCT's photo survey tool - http://bumblebeeconservation.org/get-involved/surveys/

Dawn Ewing, Bumblebee Conservation Trust

Scottish Invertebrate discoveries

It's moth-tastic up in Scotland!

Check out some of these new moth editions to Scotland:

Blomer's rivulet (*Discoloxia blomeri*)

While on a day trip to Mull, members of the Highland Branch of Butterfly Conservation discovered a new species of moth to Scotland.

After missing their ferry to Mull, they came across an unusual moth low down in a hazel tree. They had no idea what it was and fortunately took a photo. This has now been verified as Blomer's rivulet (*Discoloxia blomeri*), a new moth for Scotland. Blomer's rivulet was named after the 18th century naturalist Charles Blomer. The species occurs sporadically throughout England and Wales in deciduous woodland habitats and is on the wing from June to July.

Blomer's rivulet (*Discoloxia blomeri*) © Mary Eagleson

The caterpillars feed on wych elm.

The moth's identity was confirmed from a photograph by Banff-based moth expert Roy Leverton. Leverton, author of the award-winning *Enjoying Moths* said: "This is a most unlikely find. I could just about have imagined it turning up in the Borders, or even Dumfries & Galloway, but not this far north".

Shona Grieg, *Butterfly Conservation Scotland*

Haworth's pug (*Eupithecia haworthiata*)

In July 2013, Butterfly Conservation's East Branch found yet another new moth to Scotland along the Berwickshire coast, known as the Haworth's pug (*Eupithecia haworthiata*). This was particularly exciting as the current distribution map showed no records of the moth north of Yorkshire and southern Cumbria. Moth expert, Roy Leverton, confirmed the Pug's identity.

Haworth's pug takes flight around June to July, with the caterpillar's common foodplant being the flower buds of Traveller's joy.

Barry Prater, *Butterfly Conservation Scotland*

Devon carpet (*Lampropteryx otregiata*)

In August 2013, a wildlife recording day was organised by Dumfries & Galloway Environmental Record Centre (DGERC), with several moth traps set at Glassoch, Wigtownshire.

On the opening of the traps, the group of 9 people involved found 5 specimens of an unusual Geometridae family moth, believed to be a Devon carpet (*Lampropteryx otregiata*). The group were aware that Devon carpet moths had not been recorded much above a line between the Humber and Mersey in England, with this sighting being a new species for the region.

Devon carpet (*Lampropteryx otregiata*) © Keith Naylor

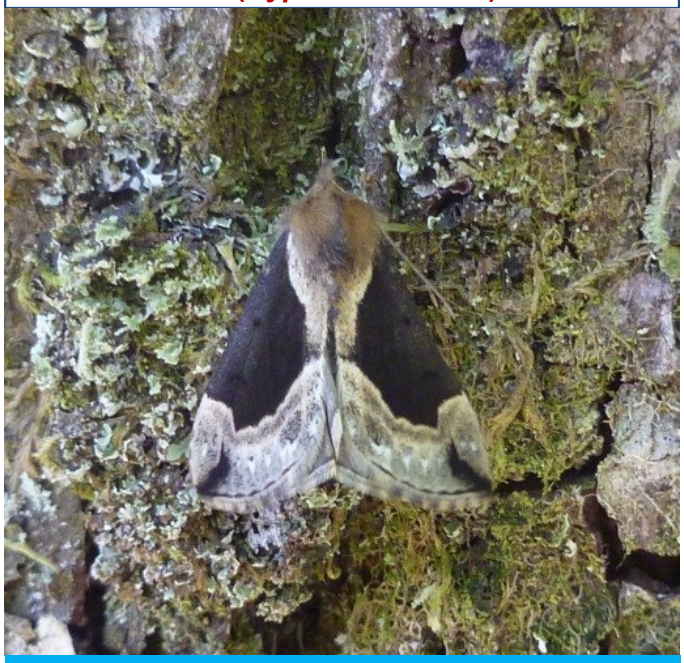
Photographs were emailed to Roy Leverton, who is the keeper of the Scottish macro-moth list, and confirmed it as the first Scottish record.

The recording day, organised as part of the local wildlife site programme, confirmed the presence of the moth's foodplant Marsh bedstraw (*Galium palustre)* in the ditches around the site which comprised a mosaic of mire, wood pasture, ancient woodland and unimproved/semi-improved grassland. The foodplant is quite widely distributed in Dumfries and Galloway and there is potential for this species to occur at other sites in the region.

Keith Naylor, *Moth Recorder for Dumfries and Galloway, Butterfly Conservation Scotland*

...and there's more! keep an eye out for these new Scottish moths too!

Beautiful snout (*Hypena crossolis*)



Beautiful snout (*Hypena crassalis*) © David Smith

In April 2013, David Smith contacted John Knowler, the local moth recorder for Stirlingshire with a record and photograph of what he thought was a Beautiful snout (*Hypena crassalis*) that he'd seen near Aberfoyle in May 2012.

The site was closed woodland of mainly oak with a considerable amount of Blaeberry, the foodplant of the Beautiful Snout.

On 21st June 2013, Jane and Arthur Jones caught another 6 on the banks of Loch Ard. On 7th of July they caught another in their garden above the eastern end of the loch.

The Beautiful snout had not been previously recorded in Scotland. Its distribution in the UK is mainly southern England, through Wales and in western England as far north as Cumbria. Nevertheless, the species does appear to be moving north. It was new to Lancashire in 2001, and was first recorded in Northumberland in 2010.

It is clear that this species has established itself in at least one area of the Trossachs but it remains to be seen how widely it has spread.

The Beautiful snout adds to a substantial list of moth species that have moved north into central Scotland perhaps in response to climatic change.

Strangely, the Beautiful snout appears to have arrived in central Scotland without having been recorded in southern Scotland.

John T. Knowler, *Moth Recorder for Dumbartonshire, Stirlingshire and West Perthshire, Butterfly Conservation Scotland*

Bittersweet smudge (*Acrolepia autumnitella*)

In August 2013, Alison Robertson noticed a micro-moth at the window of The Crichton, Dumfries which looked similar to some photographs of the Bittersweet smudge (*Acrolepia autumnitella*), a species mainly found in the South and Midlands of England. This was perplexing. However, two days later, armed with knowledge of its foodplant, Alison checked for Bittersweet at The Crichton and photographed four leaves with distinctive larval feeding mines.

The selection of photos were sent to Mark Young, keeper of the Scottish micro-moth list who confirmed its identity and the fact that it was new to Scotland.

Interestingly, back in 1865, lepidopterist William Lennon, who worked at The Crichton, also caught a new moth for Scotland. He'd noticed a strange micro-moth on the outside of a window, and had to break the glass to catch it! It turned out to be the Necklace veneer (*Euchromius ocellea)*, the first for Scotland and only the third record for Britain. So you see lightning can strike twice!

Bitterwseet Smudge (*Acrolepia autumnitella*) © Patrick Clement

Keith Naylor, *Moth Recorder for Dumfries and Galloway, Butterfly Conservation Scotland*

Scottish Invertebrate discoveries

Water beetles (and their friends) on Colonsay

A week on Colonsay in July 2013 provided a blessed relief from the heat wave, not a good thing for water beetlers. My wife and I recorded 54 species of water beetle, plus four species under seaweed on the beach and in dung. One always feels obliged to explain to non-water beetlers that a teaspoon is an essential part of the kit, as the Hydrophilidae have a subfamily (Sphaeridiinae) largely found in terrestrial habitats, mainly dung. I have tried to pass the dung-living ones on as a separate recording scheme in the past, without success. However, I must admit that dung and water, in that order, work together well in the field. My wife Sue, who uses only a tea strainer, also did rather well. Together we found 28 species new for the island, and two new for the South Ebudes as a whole.

Colonsay is a beautiful island with a great mixture of coastal and moorland habitats. The dominating Loch Fada, actually a string of lochs, was not that productive but we did get the reed beetle *Donacia versicolorea* common there on one patch of pondweed (*Potamogeton natans*). It was apparently new for the south of the Hebrides according to the maps in Mike Cox's atlas.

Rubh' Aird Alanais—Tea strainer at work! © Garth Foster

From our vantage point at Lower Kilchattan we could strike off into the island's uplands, so easily that I would claim this as the nearest I have ever slept to my favourite divingbeetle, *Hydroporus longicornis*, predictably a few yards above our house in a seepage. A Holiday is not the same without finding this one! Colonsay has an extensive area of raised beaches, complete with rockpools, old saltpans and even piles of shingle a long way from the sea. The pools were only slightly brackish and had a good fauna but the most productive site, with 18 species, was the stream running across the "golf course". Playing golf must be quite challenging here with many tiny bunkers created by rabbits and other hazards provided by the sheep and needing a teaspoon.

Reed beetle (*Donacia versicolorea*) © Ian Boote

Tobar Fuar Stream © Garth Foster

Thanks go to Alex Howard, the Laird of Colonsay, for giving us the go-ahead to collect. All the records have already been written up for the *Entomologist's Monthly Magazine*.

Garth Foster, *Balfour-Browne Club (Aquatic Beetle Recording Scheme)*

Sloth weevil rediscovered in Scotland after 100 years!

RSPB Ecologist, Mark Gurney has been spending time at the new RSPB Loch Lomond site and has been busy cataloguing the invertebrates and plants that make this site so special. On a summer visit in 2013 Mark found the Horsetail sloth weevil (*Bagous lutulentus*) which at the time looked like it might be the first record for Scotland in 100 years.

Most *Bagous* weevils are aquatic and uncommon or rare, but *lutulentus* is one of the more frequently found because it feeds on Water horsetail, (*Equisetum fluviatile*) and spends more time above the water than most of its relatives. Both larvae and adults feed on Water horsetail, the larvae often causing deformation of the plant. The best way to find the adults is by sweep netting the vegetation in late June and July. By coincidence, just a few weeks earlier the weevil had also been found by Coleopterists Garth Foster and Bruce Philp in Ayrshire! Two records together after 100 years is still significant—and like buses, after waiting ages for one, two turn up!

Robert Coleman, *RSPB Loch Lomond*

Horsetail sloth weevil (*Bagous lutulentus*) © Robert Coleman

Scottish Entomologists Gathering 2013

The 2013 Scottish Entomologists' Gathering (SEG) was held on the last weekend of June (28-30th June) and attracted a group of 22 invertebrate enthusiasts to the beautiful Dundonnell Estate at the foot of AnTeallach in Wester Ross.

Scottish entomologists enjoying the sunshine in Wester Ross © Scott Shanks

Donald Rice of Dundonnell Estate kindly offered the Estate ballroom and facilities as a base for the weekend, and provided a steady supply of coffee, tea and delicious cakes to keep even the most die-hard moth-trappers sustained late into the night.

The Estate contains a fine mix of habitats including ancient woodland, burns and steep gullies, heathland and raised beaches, with other habitats such as saltmarsh nearby.

Over 681 records of 304 species (including over 140 species of Lepidoptera) have already been submitted by attendees, with hopefully more still to come. Some of the highlights included the discovery a colony of Australian land hoppers (*Talitroides dorrieni*) and a newly emerged Northern emerald dragonfly (*Somatochlora arctica*) within the Estate grounds, and the furthest north record of the Light brown apple moth (*Epiphyas postvittana*) in the garden of a B&B in nearby Camusnagaul. The Light brown apple moth first colonised the UK from Australia in 1932, and reached Scotland (Edinburgh) in 2002.

The Highland Biological Recording group also had a very successful visit to the Estate on the 25th of May, recording 44 species including a colony of Pearl bordered fritillaries (*Boloria euphrosyne*) and Violet oil beetles (*Meloe violaceus*).

If you fancy a fun weekend of bug-hunting next year, the 2014 SEG will be held on the weekend of the 25th – 27th June, with the location still to be confirmed (suggestions welcome)- likely to be southern Scotland.

Scott Shanks, *Buglife*

Glasgow– 'Dear, Green Place'

The name Glasgow is derived from the Gaelic word 'Ghlaschu' – meaning 'dear, green place'. Unsurprising when you consider it contains over 90 parks and greenspaces, far more than any other city of its size.

With this incredible asset, it has been a fantastic summer getting schools and community groups involved in the 2nd year of the Glasgow's Buzzing project and collecting records for the national ladybird survey. We have had groups and schools from across the city involved in over 25 walks and citizen science activities.

Solitary Bee (*Colletes daviesanus*)
© Suzanne Bairner

This has produced several records for the ladybird survey, with the 7-spot (*Coccinella septempunctata*), Orange ladybird (*Halyzia sedimguttata*), 2-spot (*Adalia bipunctata*) and 10-spot (*Adalia decimpunctata*) being the most common finds. Most encouraging is the fact that not a single invasive Harlequin ladybird (*Harmonia axyridis*) has been found over the course of the summer.

With all that in mind, here is a whistle stop tour of some of Glasgow's parks, and the bugs to look out for within them.

Hogganfield Park LNR – Situated to the north-east of the city, a great place to spot the solitary bee *Colletes daviesanus* and now with a bee-bank in place, hopefully solitary bees will become as common a sight as their bumbling cousins.

Also keep an eye out for the Blue tailed damselfly (*Ischnura elegans*) around the loch's edge.

Auchinlea Park – To the east of the City, is where we found the extravagantly coloured caterpillar of the grey dagger moth (*Acronicta psi*) hiding in a tree next to the newly enhanced meadow. Also keep an eye out for the Forest bug (*Pentatoma rufipes*).

Small copper (*Lycaena phlaeas*)
© Suzanne Bairner

Linn Park - to the south of the city has seen a variety of bugs found, with my personal favourite being the small but striking Small copper (*Lycaena phlaeas*). Also keep a look out for the Orange ladybird (*Halyzia sedimguttata*) on the bark of large deciduous trees.

Kelvingrove Park – in Glasgow's West. As part of the Glasgow's buzzing work, a small but diverse meadow has been created next to the museum and has proved a great place to find the Green dock leaf beetle (*Gastrophysa viridula*). The eye-catching metallic colouration of this little beetle makes it a very cool find indeed. Also keep an eye out for the particularly large and far from silent *Sericomyia silentis,* one of the largest hoverflies you are likely to encounter in Glasgow.

Paul Gunn, *TCV Natural Communities Apprentice*

Spiders from Inner Forth brownfield sites!

As a TCV Natural Talent Apprentice with Buglife, I have had the fantastic opportunity to carry out invertebrate surveys over spring and summer this year. The surveys have been in the Inner Forth area, focused on brownfield sites which can be fantastic places for invertebrate biodiversity because of the range of habitats and patches of bareground that they often contain.

Ring-legged jumping spider (*Talavera aequips*) © Niall Currie

Left (dorsal view). Right (ventral view)

Most of these sites were coal spoil heaps which have characteristic plants and invertebrates associated with them.

As well as being astounded by the shear number of invertebrates in my pitfall traps, I found quite a few interesting species including some uncommon and locally-distributed spiders. One was a jumping spider from the family Salticidae, which is characterised by their row of large eyes, and stubby legs. As I was trying to identify this tiny jumping spider I was astonished to find it was half male and half female (see photographs). With one of the boxing glove-like palps being the male form and the other was the more slender female type. It also had one front leg with special markings that the males use to signal to females and the other was patterned as is usual for females. This unusual form is known as a gynandromorph. Gynandromorphs of other spider species can be more extreme - when the males and females are very different in size they can take on a lop-sided appearance, with 4 legs much longer than the other! With the help of both the male and female genitalia, I identified the jumping spider as the Ring-legged jumper (*Talavera aequips*), a locally distributed species in Scotland.

Another interesting spider I came across was the 'Hobo' spider (*Tegenaria agrestis*), similar in appearance to *Tegenaria domestica*, the long legged house spider that everyone is familiar with.

Although it has only been recorded in the south of Scotland a few times, it is moving north and appears to favour brownfield sites, so may be coming soon to vacant land near you!

Niall Currie, *Natural Talent Apprentice Urban Biodiversity*

Hobo spider (*Tegenaria agrestis*) © Steven Falk

The Species Champion initiative

The Scottish Environment LINK's Species Champion initiative encourages MSPs to 'adopt' a Scottish species that is currently facing significant threats, and 'champion' their survival. With their political support, MSPs will work with member organisations of Scottish Environment LINK (such as Buglife, Plantlife, and RSPB Scotland, etc.) to help conserve these species and raise awareness of the threats they face.

There are 93 endangered species on the Species Champion list ranging from bryophytes to marine mammals, and it includes 30 invertebrates. The following are some examples of Scottish invertebrates that are currently being championed by MSPs.

Bog sun-jumper spider (*Heliophanus dampfi*)
© Lorne Gill, SNH

The Bog sun-jumper spider (*Heliophanus dampfi*) is just 3mm long and is found within raised bogs in only 5 sites in Central Scotland. Scottish lowland raised bogs continue to be lost due to drainage and peat extraction. The spider is currently sponsored by Angus MacDonald MSP, who's constituency contains 2 of the known sites.

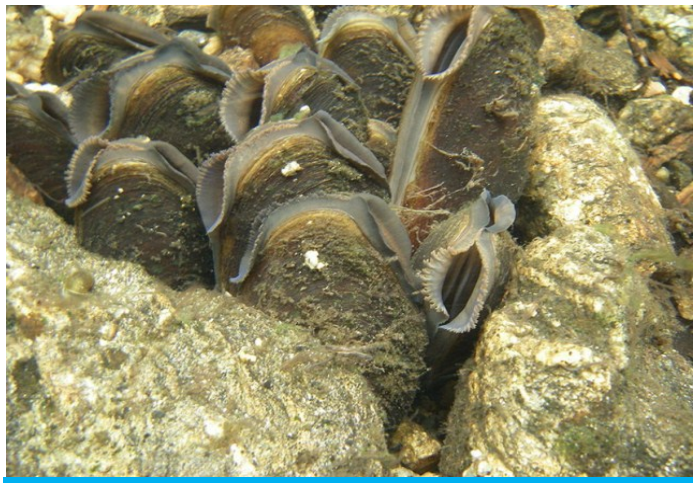
The Pond mud snail (*Omphiscola glabra*) (top right) lives in freshwater marshes and other aquatic, often nutrient-poor, habitats, primarily within Central Scotland. Fiona McLeod MSP is currently sponsoring this species.

Populations of Freshwater pearl mussels (*Margaritifera margaritifera*) are under threat from poaching, pollution, water abstraction, river engineering projects such as hydroelectric schemes and dams, and declining populations of their salmon and trout hosts.

Pond Mud Snail (*Omphiscola glabra*)
© Paul Baker,

Mary Scanlon MSP, Species Champion for the Freshwater pearl mussel recently secured a debate in the Scottish Parliament about the Government's commitment to protecting Freshwater pearl mussels. Following Mary's Parliamentary debate, a briefing was released by the Government that has revealed the extent of the threats and damaging activities faced each year by our internationally important Freshwater pearl mussel populations.

To read the Scottish Government's Freshwater pearl mussel briefing visit:
www.scottish.parliament.uk/parliamentarybusiness/58159.aspx



Freshwater peal mussels (*Margaritifera margaritifera*)
© Joel Berglund

Find out more about the Freshwater pearl mussel in the 'Pearls in Peril' article on page 12.

A number of species still don't have an MSP Species Champion. A selection of unsponsored species are shown on the following page. Why not suggest one to your local MSP!

Many invertebrate species still need to be sponsored!

Take a look at some of these incredible invertebrates that face a variety of threats to their survival that still need to be adopted by an MSP.
Lets get them sponsored today!

Upland summer mayfly (*Ameletus inopinatus*)

Pine hoverfly (*Blera fallax*)

Violet oil beetle (*Meloe violaceus*)

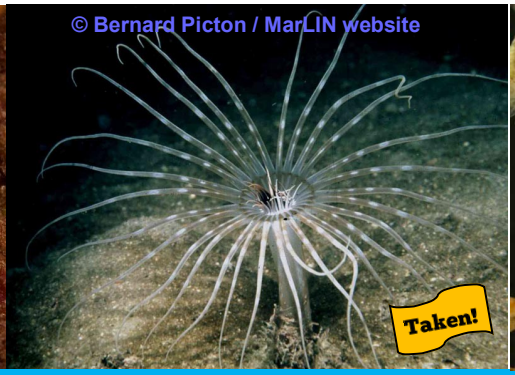
Aspen hoverfly (*Hammerschmidtia ferruginea*)

Dark bordered beauty (*Epione vespertaria*)

Slender Scotch Burnet (*Zygaena loti*)

Lonely at the bottom of the sea...

Flame shell (*Limaria hians*)



Burrowing anemone (*Arachnanthus sarsi*)

Cold water coral (*Lophelia pertsa*)

There are many fascinating marine invertebrates that are waiting to be sponsored!

Firework anemone (*Pachyerianthus multiplicantus*)

Northern sea fan (*Swiftia pallida*)

For more information about the Species Champion initiative and to find out which species your local MSP has adopted visit: http://www.scotlink.org/public/work/species-champions.php.

Rebecca Cairns, Buglife

Pearls in Peril!

Freshwater pearl mussels (*Margaritifera margaritifera)* © Jackie Webley

'Pearls in Peril' (PIP) is a UK wide project to safeguard the future of the Freshwater pearl mussel (*Margaritifera margaritifera*) in Scotland, England and Wales. PIP is funded through the European Commission LIFE Nature programme and by 14 organisations across the UK. The lead partner is Scottish Natural Heritage (SNH) and the Rivers and Fisheries Trusts of Scotland (RAFTS), and fisheries trusts and boards are the key delivery partners in Scotland. A total of 21 rivers across Britain will be involved – with 19 in the north of Scotland - all of which are NATURA 2000 sites and are designated as Special Areas of Conservation (SACs). The project runs until September 2016.

Fundamental to the project are actions that will restore river habitat to benefit freshwater pearl mussels and salmonids (Atlantic salmon and trout) on which the pearl mussel lifecycle depends; secure the long-term survival of existing populations; and raise awareness of pearl mussel conservation issues with local, national and international audiences.

On the River Dee in Aberdeenshire, a programme of riparian enhancement has begun, with tree enclosures now in place along the banksides of two tributaries. The aim is to establish areas of wooded buffer strips to create dappled shade, improve the nutrient status of the watercourse and help stabilise banks. All of this will have knock-on benefits for biodiversity, in particular freshwater pearl mussels and Atlantic salmon. Other catchments, such as the rivers South Esk and Naver, will benefit from planting schemes in future; the PIP Agricultural Project Officers are still in the process of identifying sites and working with landowners in these areas. This is the start of things to come, as 70 km of river bank will be planted in the next 3.5 years.

A River Watcher has been appointed and is based in Beauly, Highland. The main aim of this post is to combat illegal activities concerning pearl mussels such as pearl fishing and pollution. Working closely with Police Scotland and the National Wildlife Crime Unit, fisheries trusts and landowners, the River Watcher will collect evidence of suspected crimes and set up river watch schemes. These schemes will inform river users about illegal activities, what to look for and how to report any evidence. The schemes have been well received and a great deal of awareness has been raised.

Tree enclosures at the River Deen tributary © Steff Ferguson

Unfortunately, this summer evidence of poaching has been found at a number of sites, with reports of suspected incidents elsewhere. If you see anything suspicious, or have any concerns about poaching or potential damage to pearl mussel rivers please contact riverwatcher@rafts.org.uk.

For the first time in England, glochidia (microscopic mussel larvae) have been artificially introduced to their host fish at the River Ehen. Glochidia attach

Pearls in Peril
(continued from page 12)

to fish gills where they live and grow for their first few months of life without harming the fish. After approximately 10 months they drop off and bury themselves in the riverbed. This artificial introduction is one of the many actions of the

Salmon (*Salmo salar*) & Freshwater pearl mussel (*Margaritifera margaritifera*)© Lorna Wilkie

Pearls in Peril Project to aid the recovery of the declining population in the River Ehen. The Ehen is home to the largest population of freshwater pearl mussels in England, but the population is an ageing one. Next year, similar work will be carried out in two Scottish rivers.

A ditch blocking programme is being designed by our Welsh Project Officer in collaboration with Natural Resources Wales to combat the high level of silt currently draining into the Afon Eden from a large forestry plantation. Large amounts of silt can suffocate mussels and result in poor habitat for salmonids. Blocking ditches will prevent the silt draining into the river and will improve the river habitat.

Our 'Pearls in the Classroom' education programme is also underway, as fisheries trusts have the target of visiting 150 primary schools over the duration of the project. Children aged eight-to-eleven learn about the lifecycle of the freshwater pearl mussel and the threats to its survival, and take part in a range of indoor and outdoor activities. Educational materials will soon be available to all on our website, as well as further details about the project.

After an initial start-up period the project is now becoming fully active, with a range of actions happening across the UK. With our strong delivery partnership we aim to benefit freshwater pearl mussels and their salmonid hosts, to secure the future of the freshwater pearl mussel in Great Britain.

For more information, please visit:

Scottish Natural Heritage website: **http://www.snh.gov.uk/protecting-scotlands-nature/protected-species/life-projects/pearls-in-peril/**

or, RAFTS website: **http://www.rafts.org.uk/pearls-in-peril/**

Twitter @MoTheMussel

Lorna Wilkie, "Pearls in Peril" LIFE+ Project Officer Scotland

Freshwater pearl mussel (*Margaritifera margaritifera*) © Chris Daphne

Did you know?

A single female Freshwater pearl mussel can eject up to around 2-4 million larvae during each reproductive cycle! Successful larvae attach themselves to the gills of juvenile salmon and trout, which provide excellent oxygen-rich environments for them to grow and mature. Their presence does not harm the juvenile fish. After several months, the young mussels will fall from the fish and attach themselves to the river bed, where they can live for up to 130 years!

Scottish Invertebrate Talks/Events - Winter/Spring

From the beginner to the expert, there are talks/events for everyone! This section pulls together many invertebrate events into a single calendar. If you have an event you would like to publicise in Scottish Invertebrate News please send the details to scott.shanks@buglife.org.uk.

Date	Event	Cost	Location	Further Information
5th November	Collecting Beetles: a practical guide. Gabor Pozsgai, *James Hutton Institute*	Free	Craigiebuckler, Aberdeen	jenni.stockan@hutton.ac.uk Or 01224 395239
9th November	**Molluscs in Scotland meeting** (The Conchological Society of Great Britain and Ireland & National Museums Scotland). Booking required	Free	National Musueums Scotland, Edinburgh	adriantsumner@btinternet.com Or 01620 894640 See the Conchological Society's website: www.conchsoc.org/pages/workshops.php
20th November	Does submerged wood benefit riverfly communities? Kerry Mackay	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)
10th December	Breeding behaviour of the Ghost moth and the Ghost swift. Nick Picozzi, *Butterfly Conservation*	Free	Craigiebuckler, Aberdeen	jenni.stockan@hutton.ac.uk Or 01224 395239
18th December	To be confirmed…….?	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)
14th January	Ticks - issues and changes. Lucy Gilbert, *James Hutton Institute*	Free	Craigiebuckler, Aberdeen	jenni.stockan@hutton.ac.uk Or 01224 395239
15th January	Plants and Pollinators: Year 3 of a UK-wide project. Damien Hicks, *University of Edinburgh*	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)
11th February	Protection of invertebrates - the law, protected sites and protective policies. Alistair Watson, *British Arachnological Society*	Free	Craigiebuckler, Aberdeen	jenni.stockan@hutton.ac.uk Or 01224 395239
19th February	Pollinators - how can we safeguard populations in intensive agricultural landscapes? Lorna Cole, *SRUC*	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)
11th March	Tales form the riverbank; riparian beetles and land use change. Jenni Stockan, *James Hutton Institute*	Free	Craigiebuckler, Aberdeen	jenni.stockan@hutton.ac.uk Or 01224 395239
19th March	Genetic diversity and population structure of farmland sawflies. Nicki Cook, *University of St. Andrews*	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)
16th April	Strategy for Scottish Invertebrate Conservation: the first 5 years. Craig Macadam, *Buglife*	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)
21st May	AGM, ISI reports and update on conservation strategy	Free	University of Edinburgh	Keith Bland - 0131 667 7013 (evenings)

If you would like to write an article for ***Scottish Invertebrate News***, suggest a topic to be discussed, or would like any further information, please contact: Scott Shanks (Editor) **Scott.shanks@buglife.org.uk,** or Rebecca Cairns (Co-Editor) **rebecca.cairns@buglife.org.uk**

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