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Recorder News

Wildlife in The Necropolis, Glasgow by Richard Weddle	p.1
Whales and Dolphins in Scotland by Olivia Harries	p.4
What's Special about Montane Willows in Scotland? By Heather McHaffie	p.7
BRISC Project Updates	p.8
• SBIF – New Co-ordinator	
• BRISC & GNHS Bursary Scheme 2013	
• Eighteen Months later – Chris Johnson	
LRC Page	p.11
• Reports from DGERC, NESBRcC, HBRG & TWIC	
• ALERC – Similarities and differences between LRCs in Scotland, Wales and England – Tom Hunt	p.12
MSPs as Species Champions -	p.13
Book Reviews	p.14
• Dickinson <i>et al</i> (2012). <i>Citizen Science</i> . (Jonathan Willet)	
• Dobson <i>et al</i> (2012). <i>Guide to Freshwater Invertebrates</i> . (Craig Macadam)	
• Macdonald (2013). <i>Highland Ants</i> . (Sarah Eno)	
Dates for the Diary	p.15
NBN News & Updates	p.16
Chairman's Column – Jonathan Willet	p.2
Editorial - Anne-Marie Smout	p.2
BRISC Contact Details	p.2
Copy Deadline for Next Issue	p.2

which also built up banks of light sandy soil to the west – a feature known as ‘crag and tail’. These slopes are now covered by mature trees, and of course there have been trees here since at least 1717 when the Fir Park was established – so it is perhaps not surprising that a hoverfly associated with ‘ancient woodlands’ has recently been found on the south-west slopes.

In 1650 the Merchants House of Glasgow bought the land now known as The (Glasgow) Necropolis, previously part of the estate of Wester Craigs. As the west side was rocky and not able to be developed, it was planted with Scots pines and became known as Fir Park. However, around 1804, the pines started to die through atmospheric pollution and were replaced by mainly elm and willow, and the area became a park and arboretum before being redesigned, in 1832-3, as a ‘garden cemetery’. It was extended eastwards to cover 37 acres, including a former whinstone quarry, in the later in the 19th century.



Drifts of Bluebells (*Hyacinthoides non-scripta*) in Glasgow's Necropolis © Richard Weddle

Wildlife in The Necropolis, Glasgow

By Richard Weddle

The Necropolis is the second-largest greenspace in the centre of Glasgow, and its wooded areas, sandy slopes, and ivy-covered quarry-face, as well as some unmown flowery corners provide a diversity of habitats for wildlife. It is situated immediately to the east of St Mungo's Cathedral and separated from it by the Molendinar Burn, in which St Mungo is said to have fished for salmon, and which is now sadly enclosed in a culvert under Wishart Street. A monument dedicated to John Knox crowns the summit of the hill, and can be seen from the M8.

The ‘hump’ of the Necropolis is formed by a dolerite sill which stretches some distance eastwards through Dennistoun. The dolerite was formed many millions of years ago by volcanic activity, and was later worn down by glacial action

The Necropolis was “Category A” listed in December 1970 as a site of national and international importance – being comparable with Père Lachaise Cemetery in Paris. It is included in Historic Scotland's Inventory of Gardens and Designed Landscapes, and includes 32 Category A Listed Monuments, including examples by Alexander (‘Greek’) Thomson, Charles Rennie Mackintosh and J.T. Rothead. For more on the history see www.glasgow-necropolis.org/history/ and www.glasgow.gov.uk/index.aspx?articleid=8192

Continued on page 3



Chair's column

Well, Spring has sprung, I hope you have all been enjoying sun when it has been out. It has been an old-fashioned Spring, in that it is not about to get going until April, this will be a blip in the ever earlier Springs we have been getting in the last 20 years. As a skier I have been enjoying the large and deep snow cover on the hills. I am sure our montane snowbed vegetation has been appreciating the insulating blanket above it. Will there be snow patches on the hills all through this year?

In my last column I mentioned Professor Alistair Dawson's book, *So Foul and Fair a Day*. It did not come at Christmas but it will be arriving in the next few days, so I will be reviewing it for the next edition of *Recorder News*.

I have yet to see a bumblebee but a large fly did buzz past a few days ago. However, flying insects have been absent on my rambles so far. I was up at a friend's croft a few days ago and we were watching the red kites displaying, so they certainly think it is Springtime. Even better than that were all the skylarks singing away up high, the lapwings just starting to display and the golden plovers on the move.

The best sighting of the season so far was today when I was out cycling with friends and we spotted a group of twelve brown hares, all close together and almost boxing. There were a couple of Jills or does batting away unwanted male attention. The location was a few miles inland from Nairn and in fairly typical Highland hare habitat, grass fields with woodland and arable close by. The views were fantastic as we were only 40 feet away. It was the best view I have had of this behaviour, and all the more memorable as it was so unexpected when we had only stopped for a breather. I consulted the *Highland Mammal Atlas* and it jogged my memory about which sex actually does the boxing.

So I have a few records to send into the Highland Biological Recording Group. On that subject, I stood down as Chairman of that group and was very pleased that Ro Scott is now the first Chairwoman of the HBRG in its 27 year history.

One other thing that is keeping me busy is a Tour Guides Course I am doing through the University of Edinburgh and the Scottish Tour Guides Association. The course is very interesting and time consuming, but very rewarding. One of the interesting things about my fellow students is how little knowledge they have of the natural world. This is in no way a criticism, rather an observation. Probably three quarters of the class fall into that category. It is always useful to take a step back and remember that the bulk of the population has very little understanding or empathy about biological recording and the less tele-visual parts of the natural world. That is not to say that people do not enjoy observing nature, but it is not something that they would necessarily choose to do in their spare time. Engaging as many people as possible with the natural world and making sure they know how and where they can learn to record their organism of interest is as important as engaging with those people who have already have interest and knowledge but perhaps are not recording.

This of course brings me onto SBIF. They now have a co-ordinator in post, who should really help to get the whole process gathering momentum; I hope to see substantial progress by the end of this year.

Jonathan Willet. March 2013.

Copy deadline for the July issue of BRISC Recorder News is **15 June 2013**. All material, preferable in electronic format, to anne-marie@smout.org or by post to BRISC c/o Anne-Marie Smout, Upper Flat Chesterhill, Shore Road, Anstruther, KY10 3DZ tel 01333 310330



Editorial

2013 is Year of Natural Scotland – so what will it deliver if anything? I read in Scottish Environment LINK newsletter that

“This is the year when we hope to see a step change in what we do for nature, to ensure that Scotland's nature has a strong future and can continue to deliver the wide range of benefits to Scotland that we depend on.”
[<http://www.scotlink.org/public/work/current.php>]

Quite. We can all sign up to that. Asking for “a step change” however, does not indicate that we have been terribly successful in our efforts so far. What are the indicators for this? Back in January I received a publication from Plantlife with the ominous title *Our vanishing flora: how wild flowers are disappearing across Britain*. This was a re-assessment of the state of Britain's wild flowers, updating Plantlife's first report produced in 2000. In Scotland and across the rest of Britain, wild native flowers are being lost at a rate of nearly one species per Vice County per year. In total over the last 60 years Scotland has lost 97 species (53 flowering plants, 28 mosses and liverworts and 16 lichens). The report provides a league table of losses from VCs, and disturbingly Banffshire comes top with the greatest loss of all British VCs over the last 60 years. Other Scottish counties with substantial rates of loss are Berwickshire, Outer Hebrides, North Aberdeenshire, and Angus, and the losses are accelerating. About 1/3 of UK plants are of conservation concern and edging toward extinction.

We hear the same depressing message in the publications giving the status of taxa like butterflies, moths, and farmland birds. I was appalled to read in a recent article in *British Birds* (Feb 2013), presenting the 3rd report from the Avian Population Estimates Panel (APEP), that 35,000,000 game-birds are released yearly in the UK. All these birds are of course given supplementary food, but they also love caterpillars, so how does this incredible number of hungry beaks affect our butterfly and moth populations?

However, all is not doom and gloom. One of Plantlife's complaints is that although individual threatened species are protected in law, their habitat is not, and more political will is badly needed. Now 10 member organisations of Scottish Environment LINK have together produced a “Wildlife Proclamation” to raise the profile of nature conservation amongst Members of the Scottish Parliament and to identify potential wildlife champions. MSPs are asked to “**pledge that I will endeavour to retain the colour, variety and vitality of Scotland by conserving wildlife and restoring habitats**”. So far 43 out of 129 MSPs have signed the pledge. For more details and a list of the Champion MSPs see p.13 of this issue of *Recorder News*. See the full proclamation at [<http://www.wildlifeproclamation.org.uk/>].

At the European level, substantial marine areas have been added to the network of new Natura 2000 sites, particularly the Dogger Bank, the large shallow area in the middle of the North Sea famous for its rich marine life. Germany and the Netherlands had already designated their share of this trans-boundary area, and now the UK has added its share (12,330km²) making it the largest international marine site in the EU (see *Natura News* (January 2013) and also “Natura 2000 Viewer” at [<http://natura2000.eea.europa.eu/#>]

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Continued from p.1.

Drifts of bluebells (*Hyacinthoides non-scripta*) in the spring are one of the glories of the south-west slopes that comprised the old Fir Park. Some notable plants have also been found here in the recent past, including heath pearlwort and stag's-horn club-moss. Though neither has been seen in the last few years, we hope that a revised mowing regime on these slopes will allow them to re-establish. In all, over 190 species of flowering plants and trees, as well as seven ferns, a horsetail and the club-moss have been found here. These figures do not include some of the plants used in creating a wildflower meadow near the south-east corner in September 2010.

The bluebells are host to the larvae of two hoverflies: *Merodon equestris*, which is a master of disguise in that it has several forms, each of which mimics a different species of bumblebee in the hope of discouraging predation by birds; and in 2011 we were very pleased to find the aptly-named *Eumerus funeralis* (the lesser bulb-fly), the first time this had been noticed in the Glasgow area.

Solitary bees also like to build their nests in the light soils; seven species have so far been found on flowers in the Necropolis; of these, three (*Lasioglossum villosulum*, *L. smeathmanellum*, and *Halictus rubicundus*) have not been found elsewhere in Glasgow, though they probably do occur elsewhere in the city. There is also an occasional honey bee - these seem to be rare in most parts of Glasgow these days, so the most frequent pollinators are the bumble-bees (six species), hoverflies, and later in the year, common wasps.

Twenty-five different species of hoverfly have so far been found in the Necropolis, including the 'ancient woodland' species mentioned above; this is so far the only place in Glasgow where it (*Ferdinandea cuprea*) has been found, though there are perhaps older woodlands - in Pollok Park for example. Another hoverfly, *Scaeva pyrastris*, rather more striking in appearance than the *Ferdinandea*, is found here and occasionally elsewhere in Glasgow and surroundings; though officially described as 'scarce in western Scotland' as it migrates annually from northern Europe.

There is also a rare species of lichen (*Lecania cyrtella*) to be found, along with at least fifteen other kinds of lichen growing on the tree-trunks or on the stones - based on only one brief survey. Lichens are sensitive indicators of atmospheric pollution, so it is encouraging to see so many species flourishing in the city centre; no doubt in former years they would have been much scarcer. Some of them are necrotised (blackened and dead) possibly due to substances emitted from the flues of the neighbouring Tennent's brewery.



(left) Small Tortoiseshell ©Scott Shanks - (right) Scrambled-egg slime mould @ Richard Weddle.

In the early spring, butterflies such as small tortoiseshell and peacock reappear after the winter cold; the next generation appears in the late summer and autumn, when they are joined by the red admiral. The small copper likes to bask on the sunny

south-east-facing slopes in summer, and others such as meadow brown, orange-tip, and ringlet can often be seen on sunny days basking, visiting the flowery edges, or just passing through. The latter species is a relative newcomer to Glasgow, as is the micro-moth *Rhigognostis incarnatella* which was found resting on the wall by the brewery in October 2012.

Roe deer are perhaps the most well-known denizens of the Necropolis, though not often seen by day in recent years. A grey squirrel or two can be seen on most days, rabbits appear occasionally, and common pipistrelle bats can be seen patrolling the tree canopy at dusk on warm evenings. These are doubtless outnumbered by the wood-mice and voles, which are seldom seen though they occasionally leave signs of their presence - such as gnawed cherry-stones. Signs of foxes have also been noted.

The birds that have been seen (or heard) so far include blackbird, bullfinch, chaffinch, dunnock, goldfinch, great tit, greenfinch, kestrel, long-tailed tit, magpie, mistle thrush, redwing, robin, sparrowhawk, starling and wren. Some of the residents nest in the ivy which covers the former quarry-face, and feed on insects and spiders, or on the seeds and berries of the various flowering plants and grasses. There are doubtless other birds, but bird-recorders seem to overlook city-centre sites in favour of the 'hot-spots' towards the periphery of the city.



Wildflowers area at Glasgow's Necropolis © Dave Garner

Some of the plants introduced to the wildflower area in 2010 are coming up well; however others are being outgrown by rank grass, and it may be necessary to remove the topsoil and re-plant. The photograph on p.1 shows the neighbouring area, formerly overgrown with Japanese knotweed, which has now come up with a colourful floral display which we are hoping will continue in future years if suitably managed. The 'scrambled-egg' slime mould (*Mucilago crustacea* var. *crustacea*) appeared on the grass here in 2011.

Particularly on the old quarry-face, ivy is a fantastic wildlife resource. As well as providing a good nest-cover for birds, it is home to the hawthorn shieldbug and other insects, as well as numerous spiders and harvestmen. In the late autumn the ivy flowers are a valuable nectar source, particularly for moths. And of course it has a significant effect on the 'atmosphere' of any cemetery, as well as its symbolism (for the poet Byron) as 'the garland of eternity', and as such it can be seen carved on some of the memorial stones.

In 2012 the Necropolis made the news through the discovery of what was believed to be the first occurrence in western Europe of a North American comb-footed spider *Rugathodes sexpunctatus* (it then transpired that one had been found shortly before in Bearsden). The photograph shows a female with an egg-sac which she carries around for safety. This find gave rise

to some more detailed searches which have added yet another 'first' for Glasgow – the rather rare rove-beetle *Acidota cruentata*. The rove-beetles are perhaps best known through the biggest British member of the group, the Devil's coach-horse (*Ocypus olens*); this is quite common in the Necropolis and is another insect which could aptly be said to be found in a cemetery - in Irish folklore it is believed to eat the flesh of sinners! They are known to eat carrion, but also earthworms, slugs and other invertebrates.



(left) The North-American Comb-footed Spider *Rugathodes sexpunctatus* © Mike Davidson and (right) Cream-spot Ladybird @ Richard Weddle.

At least four different ladybirds live in the Necropolis: as well as the 'common' seven-spot ladybird and the perhaps even more common two-spot ladybird, the orange ladybird can be found, particularly on the underside of leaves of sycamore and its cousins the maples, where it feeds on mildews growing on honeydew exuded by aphids; the cream-spot ladybird can also be found there or nestling in cracks on the trunks of birches. The 10-spot ladybird, common around Glasgow, has yet to be seen here. These are all outnumbered by the red soldier-beetles (*Rhagonycha fulva*) which can be seen on, or flying between, flowers such as ragwort in the late spring and summer.

There are also slugs and snails and other, some would say less-attractive, creepy-crawlies such as earwigs, centipedes and millipedes (six species), and woodlice (five species). These figures may well increase as we identify more specimens. Apart from these and the insects already mentioned, there seems to be a lot still to learn about the invertebrate population of the Necropolis - but the same could be said for many of the other greenspaces in Glasgow. The main groups that need to be investigated are the moths, beetles, flies (other than hoverflies) and spiders, together with the mosses and fungi.

The full species list for the Necropolis is available at [\[www.glasgow-necropolis.org/wp-content/uploads/2011/02/necropolis_biodiversity.pdf\]](http://www.glasgow-necropolis.org/wp-content/uploads/2011/02/necropolis_biodiversity.pdf)

Among the 3,500 or so headstones in the Necropolis is one to Roger Hennedy, author of *The Clydesdale Flora: a description of the flowering plants and ferns of the Clyde district*; the first edition was in 1865 and the fifth (edited by Thomas King) in 1890, fourteen years after Hennedy's death. This was the first local flora since Thomas Hopkirk's *Flora Glottiana* (1813) and is still a useful source of information, though superseded in 1933 by John Lee's "Flora of the Clyde Area" and more recent floras covering different parts of the Clyde area. Hennedy was Professor of Botany in the Andersonian University, now part of the University of Strathclyde; an evening class led by Hennedy became the Andersonian Naturalists of Glasgow, which amalgamated with other societies in 1931 to become what is now Glasgow Natural History Society. See

[\[www.glasgow-natural-history.org.uk/gn25_2/hennedy-elliott_curtis.pdf\]](http://www.glasgow-natural-history.org.uk/gn25_2/hennedy-elliott_curtis.pdf) for a full biography.

Much of the information in this account is taken from the wildlife database at Glasgow Museums Biological Records Centre; please contact [\[biological.records@glasgowlife.org.uk\]](mailto:biological.records@glasgowlife.org.uk) for further information.

Richard Weddle manages the Glasgow Records Centre

Whales and Dolphins in Scotland

By Olivia Harries

Hebridean waters provide an important habitat for European cetaceans (whales, dolphins and porpoises), and this is arguably one of the most important areas in Europe for these fascinating, high profile mammals. A complex submarine topography, convoluted coastline and interaction of warm and cold waters all combine to make this region perfect for cetaceans. Many of the species found in this area are conservation priorities that need effective management strategies to ensure their continued survival in our waters. Twenty-four species of whale, dolphin and porpoise have been recorded in the Hebrides; that is nearly a third of all the cetacean species in the world.

This information has been gathered by the Hebridean Whale and Dolphin Trust who have been investigating and monitoring cetaceans in the Hebrides since 1994. In the Minch itself, HWDT have found a consistently high level of cetacean diversity. From the small harbour porpoise to the second largest of all cetacean species; the fin whale, a great number of cetacean species have been recorded in the waters of the Minch.



Bottle-nosed Dolphins © Nienke van Geel

Regularly sighted species in the Minch include the harbour porpoise, minke whale, common dolphin, white-beaked dolphin, killer whale and, though not a marine mammal, the basking shark is often sighted during the summer months.



Basking shark © HWDT

The west coast of Scotland is actually one of the most important areas for harbour porpoise in Europe. The population of harbour

porpoises residing in west Scotland waters was last estimated (2008) to be around ~12,100. Harbour porpoises can be seen in the Minch in any month of the year. These small, shy animals are normally found in inshore waters. HWDT monitor the harbour porpoise population using high frequency hydrophones. Harbour porpoise echo-locate almost constantly so HWDT scientists can detect them when they are under the water. This can increase the amount of data collected on this species by four times.

Nearly 60% of Europe's population of minke whales are found in UK waters, and the waters of Scotland are one of the most important in the UK for this species. The population of minke whales in the east Atlantic (including west Scotland) is estimated at around 110,000. The movement patterns of minke whales are not fully understood but they are thought to move between tropical breeding grounds in the winter and colder feeding regions during the summer. Minke whales are frequently seen in coastal and inshore waters around the Hebrides from April to October. The Hebridean Whale and Dolphin Trust have identified over 125 individuals using photo-identification of their dorsal fins and have found that some minke whales are thought to stay in the Hebrides all year round. Since 2004, minke whales have been less and less regularly sighted in the Inner Hebrides, especially around Mull. Research by HWDT suggests that a localised shift in distribution may be occurring with minke whales utilising more northern and western areas of the Hebrides.

Common dolphins are another seasonal visitor to the west of Scotland. They can be seen in the Minch between April and October every year. Common dolphins are notoriously playful and their leaping and splashing can sometimes be seen from several kilometres away. They are fast swimmers; reaching speeds in excess of 15mph. Common dolphins have high-pitched vocalisations that can, at times, be heard by humans above the surface of the water. These dolphins can be seen in groups of over 100 in the summer months in coastal and open waters of the Minch.



White-beaked Dolphins at Achiltibuie Bay © Sandy McIntosh

White-beaked dolphins are relatively unknown to the general public despite there being nearly 80% of the European population in waters off Scotland. They are found in high concentrations on the west coast of Scotland, specifically in the northern Minch. They have very distinctive colouration pattern with patterns of white and grey over their flanks and a white-beak as their name suggests. White-beaked dolphins are also found on the east coast of Scotland and the north-eastern England coast. Current research being undertaken by HWDT has found marked differences between the echolocation clicks of

white-beaked dolphins on the west coast of Scotland compared to the clicks of east coast white-beaked dolphins. This suggests that there may be sub-species of white-beaked dolphins in different areas of UK waters – a hugely significant finding. Population estimates for white-beaked dolphins in Scotland are between 7,856 and 11,760.



Killer Whales © HWDT

There is a small resident community of killer whales inhabiting waters off the west coast of Scotland. The group consists of just **nine** individuals; four males and five females. Some of these individuals have been recorded for over thirty years. These individuals do not associate with any other populations of killer whales in the northeast Atlantic, and not a single calf has been spotted for over 20 years. HWDT believe that the group is made up of predominantly older individuals and that the females are probably post-reproductive. The outlook for this group is bleak: this group of killer whales are due to go extinct in our lifetime. Sightings of this group are rare as they seem to patrol the huge expanse of water between the south west coast of Ireland to the north-west coast of Scotland, but they have been sighted numerous times in the Minch. Ocean sunfish and turtles (leatherback and green) have also been sighted in the Minch.



Leatherback Turtle © Cal Hawes

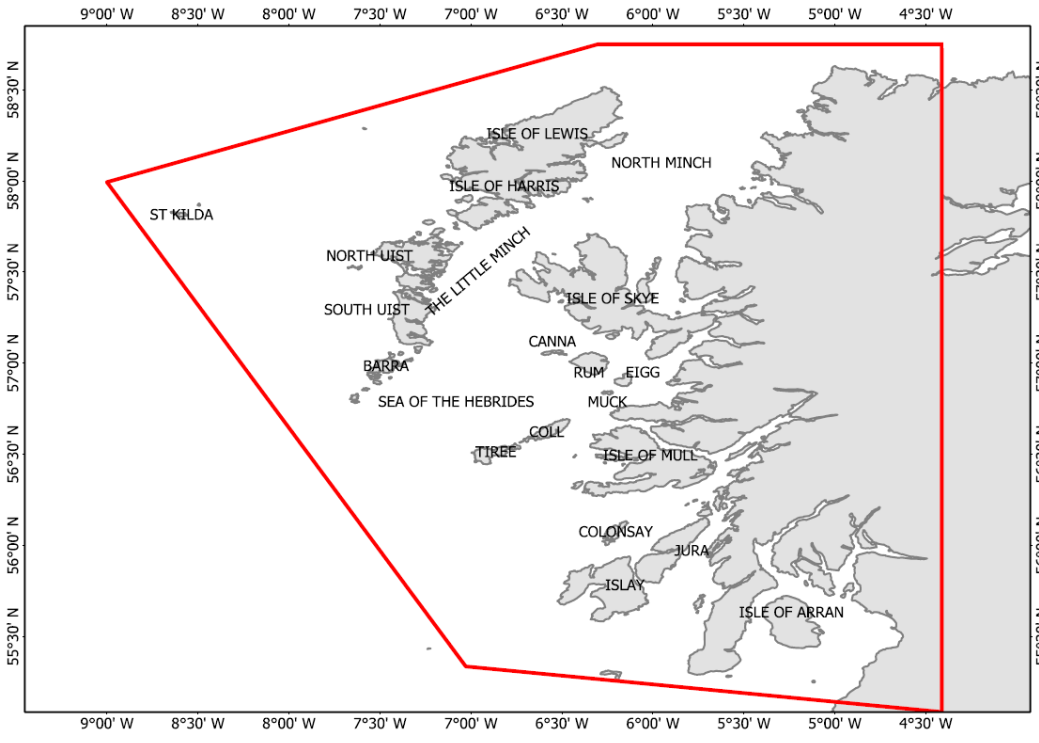
HWDT have conducted dedicated visual and acoustic surveys in the Minch every year since 2003. We cover over 10,000km of water every season and train nearly 100 volunteers in survey techniques. During the winter months, when HWDT are not collecting data, we rely heavily on our Community Sightings and Strandings Network. Encouraging members of the public including fishermen and wildlife tour operators to submit their sightings (and photos) to us can provide us with valuable information on for example what species are resident in our waters throughout the year and when our seasonal species arrive and leave. A recent example of the advantage of having a Community Sightings Network occurred in February when a group of five sperm whales, the largest predator on Earth, was reported to HWDT. This rare and amazing sighting shows just how great Hebridean waters are for seeing some of the largest animals on earth. Who needs to go to Australia or America when these fascinating creatures are right here on our doorstep? You do not need to be a trained scientist to collect data on marine

mammals and to contribute to their conservation. All you have to do is report your sighting to HWDT and you will be helping to safeguard these species in these waters for the future.

Data collected by HWDT onboard our research vessel, through our Community Sightings and Strandings Network, are used to inform those who manage Scotland's seas with the best available information. Managing and conserving marine species and habitats is not easy. The marine environment is ever changing, and with the prospect of climate change, offshore renewable energy development, and changes in the management of fish stocks, it is essential to understand how a species may react to changes in its environment over time.

The effects of climate change on marine animals are still uncertain; however, habitat fragmentation leading to population

declines are a concerning possibility. Hebridean waters are a wonderful area for cetaceans and other marine wildlife, but their diversity is not uniform or fixed in stone. When we talk about the importance of managing and maintaining biodiversity in our seas, and take conservation decisions based on this, we have to remember to do so on a case-by-case basis. Both coastal communities and marine mammals are dependent on the sea and its resources for their survival, HWDT are committed to working within local communities to ensure the sustainability of the marine environment for generations to come. To find out more about how you can help HWDT visit [\[www.hwdt.org\]](http://www.hwdt.org)



HWDT survey area (marked by red boundary box)

Please remember to report any sightings or stranded marine mammals to HWDT online at [\[www.hwdt.org\]](http://www.hwdt.org).

The Hebridean Whale and Dolphin Trust surveys take place between April and September every year, and have done since 2003. HWDT cover over 10,000km per year,



The Hebridean Whale and Dolphin Trust research vessel 'Silurian' at St Kilda © HWDT

WHAT IS SPECIAL ABOUT MONTANE WILLOWS IN SCOTLAND?

By Heather McHaffie

Much of our higher ground has no significant cover of trees or shrubs. Those that do occur are on steep slopes or cliffs where grazing animals cannot so easily browse. Centuries of grazing have confined willow bushes to ledges, but without this restriction they could grow more vigorously in deeper soil and be more widespread. Solitary rowans cling onto the back wall of corries and sometimes the grey-green leaves of montane willows can be seen, often high up on a ledge. While there are many willow species at low altitudes, only up to ten species of willow occur at higher altitudes, and they are mostly small shrubs less than a metre tall. The most species-rich sites for montane willows are lime-rich and several species can co-occur. Montane willows also occur on more acidic rocks but there are typically fewer species present. These willows provide a habitat for many other plants, animals and fungi but there are now so few areas of scrub left that this habitat is poorly represented. Continuous grazing between the steeper safe sites has selectively removed the more susceptible species, so that they are now only found in smaller, fragmented populations.



Richard Marriott and Natacha Trachon planning where to plant in 2009. Note the long grass. © Heather McHaffie

Even in a protected location small numbers of plants are more vulnerable to droughts and rock falls, so seed production declines, and eventually another species is lost.

The highly localized associated species disappear too, and so the total biodiversity is reduced, with little prospect of recolonisation from other distant sites. In this way montane communities have already been impoverished and in most sites that might be suitable the shrubby willow component has completely gone.

Two silvery-grey-leaved willows are part of this potentially rich community, but they might only be glimpsed through binoculars hanging out on ledges as the last survivors of far more extensive populations. Both willows have been classified as 'Vulnerable' in the UK, using IUCN criteria to define species with small numbers that are threatened with the loss of further individuals. The downy willow *Salix lapponum* has narrow, hairy leaves and can grow on less-calcareous rocks as well as in these lime-rich locations. *S. lapponum* occurs within fifty-six 10km squares, mostly in the Scottish Highlands, but has declined considerably over the last 50 years.

One of the best examples of montane scrub with *S. lapponum* is seen within an enclosure around Corrie Sharroch (Corrie Fee National Nature Reserve). This is the second-largest population of montane willow scrub and it grows at the lowest altitude. It

still has good numbers of bushes, but they are mostly confined to the higher ledges. The old, woody bushes can produce viable seed but there are very few seedlings or young bushes, and although this area has been fenced for some time the dense sward allows almost no sites for the establishment of seedlings. Growing more locally in Corrie Sharroch is the woolly willow *Salix lanata* which is even more vulnerable. This species has broad, oval leaves, densely covered with hairs. It only occurs in thirteen areas within Scotland, on three occasions as just a single bush. As all willows have separate male and female plants these single bushes have no future. There are only two locations with several hundred plants, of which Corrie Sharroch is one. The other stronghold for *S. lanata* is at Corrie Cheap and this has the largest population of over 800 plants, at the highest altitude. Unlike Corrie Sharroch the Corrie Cheap willows are mainly *S. lanata* and are very low-growing. Of the remaining *S. lanata* sites four have around 100 plants and four only have around 50 individuals. In the areas with smaller numbers the willows do not necessarily grow close together, and the irregular distribution of male and female bushes means that there might be little or no pollination and seed production.



(left) A cultivated specimen of *Salix lanata* male, popular in gardens for catkins. (right) *S. lanata* leaves on plants in root trainers showing the greyish tinge and shape © Heather McHaffie

Because *Salix lanata* is a species of particular conservation concern it was included in the UK Biodiversity Action Plan process, and a Steering Group was set up in 1999 led by the National Trust for Scotland (NTS) with Scottish Natural Heritage (SNH), the Royal Botanic Garden Edinburgh (RBGE) and other individuals. Under the leadership of David Mardon the NTS has developed techniques for growing and planting montane willows on the Ben Lawers reserve and the Steering Group had the benefit of their experience. Also, from 2002–2005 there had been a collaborative project between different institutions, universities and the RBGE on many aspects of montane willow biodiversity. This provided information about the genetic diversity of different populations. The Steering Group discussed further work and gathered information on population sizes from repeat surveys. The Woolly Willow Steering Group (WWSG), as it became known, had wide-ranging aspirations. We discussed planting entirely new populations where the habitat was right but where all willows had disappeared, and also how to supplement existing small populations to make them viable. An over-riding constraint was that there was no point in attempting any recovery work while grazing levels were high. This meant any action had to be confined to areas that were either very steep or had benefited from deer control and the removal of sheep.

It was at this point in the discussions that an extra factor was added. SNH set up the Species Action Framework (SAF) initiative looking for a range of species that would benefit from additional funding. *Salix lanata* was a good candidate as there had already been a large amount of preliminary work through the NTS work on Ben Lawers together with the on-going survey

work largely undertaken by Richard Marriott. The WWSG were generating realistic targets and had begun to focus on a limited number of achievable sites. The SAF provided some additional funding in the period from 2007-2012 by which time this first phase of the recovery project had nearly been concluded. The end of the SAF funding was celebrated in a conference. Posters were produced for each species and a Saving Species radio programme was based around the conference and included reference to *S. lanata* [<http://www.bbc.co.uk/i/b01p3k5z/>]

There were two centres for recovery work on the selected populations. The NTS from their nursery at Killin had already planted two new populations of *S. lanata* within exclosures. These were to compensate for the two single plants that could not be supplemented as they were in areas with little protection from grazing. Montane willows usually grow on north-facing slopes where winter snow-cover provides shelter from extreme weather and from herbivore attack in late winter, and these sites were experimentally east or south-facing. Most recently the NTS also collected cuttings from a large number of *S. lanata* bushes on the nearby Meall na Samhna estate which were propagated to provide bushes to plant on north-facing crags adjacent to the main willow cliffs in 2012. The sheep had been taken off the hill and it was hoped the steep ground would provide adequate protection from the deer. It should be noted that all planting sites are approved by SNH and have the full support of the landowner.



Climbers planting *Salix lanata* at Corrie Garbhach
© Richard Marriott

At the RBGE a new shade tunnel for propagation was bought using the SAF funding. Source sites were selected and a strategy devised for three sites that were to be planted. The first was at Corrie Garbhach on the Feshie estate. This is both a steep site and in an area where deer numbers had been greatly reduced. Around 30 *S. lanata* bushes have been recorded but they are scattered across a large corrie and do not appear to produce seed. At this site it was decided to introduce more genetic variation and the plants were grown from seed collected from three other sites. The new willows were planted to link the existing ones,

which were not disturbed. Because the site was so steep it was dangerous to approach and climbers from Glenmore Lodge were employed (using SAF money) for the actual planting, and they used roped access. The climbers were directed by Richard Marriott using two-way radios and they inserted flags as they planted to ensure that exact locations could be photographed from the other side of the corrie. The photograph above shows where more than 250 willows were planted, and the number of individuals placed in each location has also been recorded.

The second site the RBGE was involved with was at Corrie Sharroch within the exclosure. Although this is one of the best sites, there is almost no regeneration. The few rock falls do not create enough disturbance in the thick vegetation for the available seed rain to have any success. It was decided to use only seed or cuttings sourced within the corrie and also, as on Ben Lawers, to plant two other species as well - *S. lapponum* and the dark-leaved willow *S. myrsinifolia* - as all three occur together. Having other species present also provides alternative targets for mountain hares, occasional roe deer and voles. The planting sites were selected to include areas of extended winter snow cover, which had been all too accessible before the fence was built.



Planting at Corrie Sharroch on lower ground with Loch Leven volunteers 2009. Note midge nets. © Heather McHaffie

Planting was carried out with help from the Glen Doll Rangers, NTS, SNH staff escaping from their offices, people from the Loch Leven volunteers group, RBGE horticulture staff and a host of midges (speeds productivity?) Over 600 *S. lanata* seedlings were planted, sourced from more than 30 parent plants for genetic diversity. The plants were grown in root trainers by Natacha Frachon, the RBGE horticulturalist, and wrapped in cling film in bundles of six for planting. Each of the six was from a different parent plant. The planters knew where to put them as three colours of flags, one for each species, had been artistically arranged in the corrie in groups and drifts, below the cliffs and along the line of the burn. In all over 2,400 willows were planted, but although they involved much effort in collection and propagation they only covered a very small part of the corrie. All new planting was situated away from the original plants and approved in advance by an SNH expert.

The final site in Caenlochan Glen has not been planted yet. Another survey was undertaken in 2011 to check on the locations of existing plants and look for potential planting locations. There is always a problem with the reduced accuracy of GPS references on steep slopes. For a long time it had been difficult to match up grid references from different recorders. This was finally addressed when I was dispatched to sit on a (thankfully midge-free) hummock across from the survey slope,

equipped with a two-way radio, binoculars, a photograph of the site Richard Marriott had prepared earlier, marker pens and a notebook. Four people in two groups went up and down the crags with my helpful direction along the lines of 'there are some grey leaves on top of the cliff just above you, no, up a bit, up a bit more!' My busy companions then reported back on the number of willows, and their condition, and I marked them on the photograph. This survey led to a sudden population 'increase' from the possibly only 40, probably up to 62 plants, to a definite 72 plants. People also reported on promising-looking sites for planting. Although the survey showed the population was larger than we thought, the willows are in widely dispersed groups and we felt planting was still appropriate to bridge the gaps. We already had willows in cultivation from this genetically diverse site, some of which had been used for Corrie Garbhach, but there are over 200 plants available. It had been intended that SNH would approve the planting sites in early 2012 and planting would follow, but the near-continuous rain made the access road impassible, so the work has been postponed until 2013.



Salix lanata seedling after two years in Corrie Sharroch
© Heather McHaffie

It is tempting to think that once planting is complete the project is concluded, the populations restored, and all will be well. Unfortunately that is only the first stage. For any kind of out-planting it is vital to monitor progress, to learn from success or failure and to assess whether or not the effort has been worthwhile. Just as it took a long time from first discussions to final planting, the assessment of each planting site must take even longer. As the willows move through age classes there will be different features to monitor. For up to five years it might be enough to know if a good percentage of the willows have survived; 25% is good, 50% even better. Information can be collected on overall height, the extent of grazing and by whom. Within the next five years as the willows become older they can be expected to flower, and this will only be successful if the buds are not grazed in the spring. This might mean monitoring needs to be done at different times of the year. The next expectation is that seed will be produced and the project can only be said to have succeeded when the first seedlings appear and grow to seed-bearing maturity themselves. Meanwhile time and effort is needed to provide this monitoring. This could take up to 20 years, so I might just about be able to totter up to Corrie Sharroch to admire the montane scrub growing at last on less precipitous ground. Shall I find a vibrant community of patchy scrub, rich with a mosaic of flowers and bryophytes, with unusual fungi, buzzing with insects and a host of invertebrates that slither, slide and munch and alive with small birds flitting through the bushes? Time and a lot of monitoring will tell.

Heather McHaffie is Scottish Plants Officer at the Royal Botanic Garden Edinburgh

PROJECT UPDATES

Scottish Biodiversity Information Forum (SBIF)

This forum, which emerged as the outcome of BRISC's e-petition, has now got its first co-ordinator, Christine Johnston, who has sent us the following:



Progress with the Scottish Biodiversity Information Forum (SBIF) – appointment of the SBIF Co-ordinator

On the 1 March 2013 I started work as the SBIF Co-ordinator, a role that BRISC and SNH have been working to develop since May 2012. The post is funded to the end of March 2014, and its purpose is to support the work of the Forum to ensure the Forum's strategy is taken forward.

The Forum's Steering group, along with its Commercial Interests and the Data Flows/ Data Sharing sub-groups have all met in the last few months and have been discussing and sharing knowledge of common challenges facing the biodiversity data community in Scotland. The aim is to use the outcomes of these meetings to develop an Action Plan that SBIF will be able to take forward. The Action Plan will also be informed by the results of the 2012 online questionnaire and the discussions that were held at the Forum workshop held in May 2012. This coming year SBIF will be developing its online presence, including its website and social media activity.

If you would like to get involved with the Forum, or to be kept informed of SBIF's activities, my contact details are:

Christine Johnston¹

SBIF Co-ordinator, c/o TWIC

Caretaker's Cottage, Vogrie Country Park

Gorebridge, Midlothian, EH23 4NU

Tel: 01875 825968

Email: sbifco-ordinator@wildlifeinformation.co.uk

Website: www.wildlifeinformation.co.uk/sbif

BRISC & GNHS 2013 Bursary scheme

By Louisa Maddison, BRISC Secretary

BRISC and GNHS are continuing with their bursary scheme, giving people across Scotland a chance to attend study courses and improve their knowledge and skills. The choice of recipients for the four bursaries was typically difficult this year, and we were glad to award a fifth bursary thanks to an anonymous donation. The committee also made the decision to award two £100 bursaries to The Conservation Volunteer Apprentices, giving a total of seven bursaries awarded for the year. The names and courses of the recipients are shown below, with all courses being run by the Field Studies Council.

3 BRISC bursaries:

- Robert Wright - Invertebrate Surveying Techniques
- Nikki MacDonald - Fern Identification (Intermediate)
- Michael Goldie - Invertebrate Surveying Techniques

2 GNHS bursaries:

- Claire Foot - Sphagnum Moss
- Laura Cunningham - Identifying Freshwater Invertebrates

2 TCV bursaries:

- Niall Currie - Introduction to Solitary Bees
- Julie Smith - Mosses and Liverworts

¹ There is a short biography of Christine on TWIC's website *ed*

The bursary scheme will continue in 2014 and we aim to provide more information to candidates regarding our criteria. We want people to gain more skills in biological recording, and be able to share this information with others as well as contribute useful records both for under-recorded species/groups and geographically. If you have any questions about the bursary scheme please email [bursary@brisc.org.uk]. The forms for 2014 will be available at the end of this year.

Eighteen Months Later

By Chris Johnson

Autumn 2011 saw me on an 'Identifying Fungi' course at FSC Kindrogan with a bursary from BRISC. An initial report was provided for *Recorder News*, No 83, October 2011. This subsequent report is to show what, if any, progress has been made and as to whether the money was judiciously spent.

It was almost certainly waxcaps that caught my peripatetic attention when I decided to study fungi. A strange choice perhaps, living on an island almost devoid of trees, when approximately 70% of all fungi are associated with timber. It could easily have been another taxon: apart from birds and flowers, the islands are under-recorded for other taxa.

The main islands of the archipelago are Lewis, Harris, North Uist, Benbecula, South Uist, Eriskay and Barra. As ferry travel is required to visit Lewis, Harris and Barra, most of my time is spent on the Uists and Benbecula. Habitat-wise, the islands are split west to east. Most of the west is machair: wind-blown shell-sand, built up over centuries. Most is stable, protected by dune systems; well drained, unimproved and species-rich. To the east, peat-based heather moorland with the higher ground predominantly dry, and the rest wet to very wet, with considerable areas of bog. Numerous fresh-water lochs create an attractive mosaic, with the margins providing another habitat.

The paucity of trees has already been mentioned but two relatively young conifer plantations provide a change of scene, though too immature for much fungal activity. Finally, two SSSIs that have, or had, some more mature trees - although neglected - benefit from being deer-fenced.

Historically, the Outer Hebrides (OH) have been visited by several noted mycologists, who have provided most of the records to date. However, these visits were largely transit-stops on their way to St. Kilda. St. Kilda has a disproportionate species total for VC110.

The waxcap *Hygrocybe coccinea* ©Chris Johnson



The machair is a key habitat in the crofters' cropping cycle, with areas cultivated on a two year rotation. These cropped fields are useless for fungi but the remaining areas, which are grazed without any enrichment, support an interesting group of fungi. The most obvious species in this habitat are the *Hygrocybes*, commonly known as waxcaps, forming one of the most important and indicative fungal genera of well-drained, unimproved, coastal grassland, although a few prefer wetter habitats. The vernacular name is derived from their waxy appearance which arises from the greasy texture of the cap and stem. These large and brightly coloured fungi often appear in large numbers and create a striking spectacle. There are currently

37 species on the OH list of which I have located 18 from various sites.

(Below) *Entoloma queletii* ©Chris Johnson



Genus *Entoloma*: the pinkgills, are far from colourful, being shades of brown and blue. They represent a huge and difficult group that more often than not require microscopy to determine. A healthy 57 species appear on the OS list of which I have found just nine. However, a tenth scarce species is new to

the list: *Entoloma queletii*. (It has not read the rule book, being strikingly pale, and does not really have pink gills, although the spores are pink.)



From left *Geoglossum cookeanum*, *Clavaria acuta* and *Clavulinopsis fusiformis* ©Chris Johnson

Other indicative genera of unimproved grassland are:

Geoglossum: the earthtongues (three found); and *Clavaria* and *Clavulinopsis*: clubs, spindles and corals (six found).

These are the results from two years' surveying in this fragile habitat. They are the charismatic genera of unimproved grassland and good ecological indicators of prime habitat. Other genera are present; some as single species, and species associated with dung are quite common.

One has to work much harder on the acidic, boggy moorland where the fungi are sparse. One genus that loves boggy ground, especially sphagnum bog, is *Galerina*: another difficult group where many of the species are dauntingly similar. Fifteen species appear on the OH list and I have located 13, but some of these are new to the OH.



Galerina calyprate ©Chris Johnson



(Above) *Lichenomphalia umbellifera*, (below) *Arrhenia sphagnicola*
© Chris Johnson



Lichenomphalia are small, fleshy fungi with decurrent gills associated with algae and lichens on acidic soils. *L. umbellifera* is very common and its yellow-fruiting cousin of higher altitudes, *L. alpina*, has been reported. Similar looking but in a different family are the *Arrhenias*. The usual notation for this genus is 'widespread but seldom recorded', which has a lot to do with the habitat and not many people looking. My first was *A. sphagnicola* with its typical dark scales on the cap. The second turned out to be a huge surprise: *A. umbratilis*, a first authenticated record for Britain. See the Scottish Fungi website for a profile: [<https://sites.google.com/site/scottishfungi/home>].

Another important habitat is the woodland associated with Lews Castle, Stornoway. Although artificial, it has sufficient age to be species-rich. Last year my wife and I put in five visits during the autumn period. These were long, tiring and expensive trips involving a ferry crossing, so I am very grateful to our local Natural History Society, Curracag, for some financial assistance with the travelling costs. A report on this survey has been published in the Curracag newsletter and can be accessed here: [<http://www.curracag.org.uk/Documents/fungi%20report.pdf>].

This is a snapshot of the main habitats: there are good numbers of records emanating from the SSSIs and also established gardens.

Note:

The OH list is an extract from the Fungal Records Database of Britain and Ireland (FRDBI) checklist which I use as a reference point and benchmark. The other national list, run by The Association of British Fungus Groups (ABFG) is CATE2. All my records are sent to both groups and to our own Outer Hebrides Biological Recording Project (OHBRP) where they are uploaded onto the NBN Gateway. Photographs and photomicrographs of the species recorded can be viewed at: [<http://www.hebridensis.co.uk/Fungi/Fungi.php>].

Acknowledgements:

It gives me great pleasure in thanking BRISC for the bursary in 2011, especially as my original thank-you was inadvertently edited out.

And to reiterate my thanks to the Curracag Committee for help with travelling expenses.

Chris Johnson

LRC PAGE

[It is planned here to provide regular updates from Scotland's various Records Centres and their activities. Ed]

Dumfries & Galloway Environmental Resources Centre (DGERC) update.



By Mark Pollitt, DGERC Manager

The local records centre for Dumfries & Galloway continues to operate and currently employs one full-time person to manage a local database of wildlife and habitat information. DGERC are always grateful to receive sightings from wildlife recorders so please do contribute if you live in or visit the region.

If you are planning to visit Dumfries & Galloway this year, why not time your visit to coincide with one of the BioBlitz recording events this summer? To celebrate World Oceans Day on Saturday 8 June, Solway Firth Partnership, Scottish Wildlife Trust (SWT) and DGERC are organising a BioBlitz at Brighthouse Bay near Kirkcudbright. The site is part of the Borgue Coast SSSI and includes sandy and rocky shore habitats, coastal grassland and adjacent broadleaf woodland. The bay is the only Scottish site for the beautiful perennial flax, which should be in flower at the time of the event.

The second BioBlitz, co-organised by SWT and DGERC, will take place at Barstobrick Visitor Centre near Ringford on Friday 12th and Saturday 13th July. Set amongst farmland, the site has a network of excellent accessible ponds surrounded by flower-rich marshy grassland, woodland and a hill monument with spectacular views of the surrounding countryside. The programme is still in the early stages of preparation, but will include moth trapping, bat walks, mammal trapping, a dragonfly watch, bee and butterfly walks and lots more too.

Everyone is welcome, and we are particularly keen to invite recorders for taxonomic groups requiring more specialist skills which are rather thin on the ground in Dumfries and Galloway. We would greatly appreciate help from anyone willing to record bryophytes, lichens, fungi, beetles, spiders – in fact anything out of the ordinary – at either of the events. We have a small budget and may be able to cover some expenses for one or two specialists willing to provide public-facing activities too, so please contact Mark Pollitt (info@dgerc.org.uk or 01387 760274) if you would like to help out on one of the days.



North East Scotland Biological Records Centre (NESBReC) update. February 2013

By Glenn Roberts, NESBReC Manager

In 2012 NESBReC passed the 1,000,000 records threshold. We were obviously very well pleased with this landmark moment and we managed to get some good local press coverage out of it too. The millionth record was a red squirrel in a garden near

Laurencekirk in the south of Aberdeenshire. Here is to the next million!

Our annual Recorders Forum takes place on 9th March this year at the University of Aberdeen. This is an excellent opportunity for recorders from all over the North-East of Scotland to meet up and discuss all things to do with biological recording and to listen to a variety of presentations that are of interest in both the national and local context. The last couple of years have seen around eighty attendees at the Recorders Forum and at the time of writing we are hoping for a similar turnout this year, weather permitting. The event is a great way of meeting many of our regular record contributors and saying thanks for their continued support.

We have just begun work on a Mammal Atlas for North East Scotland and the Cairngorms National Park. We are in the public awareness stage at the moment and are hoping to encourage established recorders and those new to recording to record any mammals they see over the next couple of years with the atlas being produced sometime in 2015. We also hope to get more publicity out of this project, not just for mammals, but for biological recording in general since mammals are easily understandable to the general public. In addition, our records will contribute to the Mammal Society's national atlas, also planned for 2015.

Every summer we run identification courses for the general public at various locations and for different groups of species. This year's courses are not yet fully confirmed apart from an amphibian surveying day in early April in association with NARRS and a crane fly workshop in September in association with Buglife. We do intend to have a few events focusing on certain mammals to compliment our Mammal Atlas project.

We also aim to promote our own Big 5 Species for the North East during 2013. This will be a joint promotion with the North East Scotland Local Biodiversity Action Plan. The species we chose are: bottle-nose dolphin, small blue butterfly, hedgehog, pine marten and toad. These choices reflect various projects that NESBReC and the NESLBAP are involved with as well as trying to involve as many people as possible from the general public.

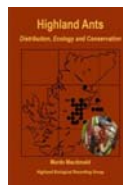


Highland Biological Recording Group (HBRG) update

By Ro Scott,
chair of HBRG

Murdo Macdonald has just published the next HBRG

Atlas, which is of Highland Ants, online. This will be its main form of dissemination. It is downloadable for free from: [<http://www.hbrg.org.uk/Atlases.html>] Before downloading, enquirers are asked to answer a few questions, e.g. whether you live in Highland or elsewhere. This is just so we can gauge levels of interest in Highland ants, and responses can be submitted anonymously.²



Also, HBRG has an exciting prospect ahead in the form of a European-funded exchange with recorders in Hungary, Poland and Romania. Three Scottish parties, each consisting of four HBRG members, will have the chance to visit one of the countries for five days; Hungary in May 2013; Romania in June 2013; and Poland in May 2014. They will meet local recorders

and join in with activities there, including a BioBlitz in each country. The hosts will then come to Scotland in September 2014 to be entertained by HBRG. This has been organized by David O'Brien, a HBRG member with European contacts in the herpetological world. We are very grateful to him for accessing the relevant funding and making the necessary arrangements.

The Wildlife Information Centre (TWIC) update

By Graeme Wilson, TWIC Manager

The past few months have been exciting times for The Wildlife Information Centre³. We increased the number of staff, run a variety of events and workshops, seen new members join the Board of Directors, and been awarded several exciting contracts, including one to host the Scottish Biodiversity Information Forum (SBIF) Co-ordinator.

We currently have a Centre Manager, a GIS and Data Officer, Ecologist, a half-time Data Processor post and a 3.5 days SBIF co-ordinator post based at our office. On top of the five members of staff we also have a good number of volunteers in our office. We have five coming in - one day a week - with space for a few more, as well as volunteers undertaking fieldwork during the survey session.

We held a very successful Autumn Conference in November attended by 50 individuals, which rounded off a year that included our Spring Conference, fourteen Recorder Excursions and three workshops on winter trees ID, mammals and an introduction to beetles. We also took part in a couple of BioBlitz, as well as organising one ourselves, which was attended by the Environment Ministers from the British Irish Council.

So far in 2013 we have had a fully-booked bryophytes workshop and are just about to hold our Spring Conference. At this conference we will be awarding the Bob Saville Award for outstanding contribution to recording in our geographical area. This year's recipient is Ray Murray of the SOC, who has been Borders Bird Recorder for 35 years.

We are also gearing up for the rest of the year with a full timetable of Recorder Excursions, three workshops planned and our Autumn Conference and AGM. We are planning on being involved with more BioBlitz, as well as running two BioBlitz ourselves. We will also be updating our website very shortly.

The past few months have been exciting enough but with new Directors and new staff on board the team at TWIC are really looking forward to the future. Keep up to date with the developments at TWIC through our website, discussion forum, Facebook page and Twitter feed. There is also a new TWIC Manager Twitter feed for more personal views and news, and we will be launching a TWIC LinkedIn page shortly.
Visit [www.wildlifeinformation.co.uk]

Message from ALERC –

Similarities and Difference Between LRCs in Scotland, Wales and England

By Tom Hunt

Having been working for the Association of Local Environmental Records Centres for over a year now, it has been great to travel around the country seeing the many similarities and differences between local record centres and talking to them about how they operate and how they interact with their partners.

² See a review of this publication on p.15
BRISC Recorder News No 89

³ TWIC now covers both Lothians and the Scottish Borders - *ed*
www.brisec.org.uk
www.facebook.com/BrisecScotland

Naturally, as LRCs perform many of the same functions, there can be a strong affinity between them. Many of the challenges are the same; for example the issue of collecting and digitising data from consultant ecologists is something that all the LRCs I have spoken to would like to get to grips with.

However, despite facing so many of the same challenges, on closer inspection there can actually be quite a lot of difference between LRCs. One of the most noticeable differences is the way in which they are set up. LRCs essentially come in three flavours: local authority, wildlife trust and independent. Independent LRCs are unsurprisingly the least common of these three types, especially when one considers the amount of time, effort and resources it takes to set up a not-for-profit company. It therefore makes sense for more established organisations to host the LRC that is usually considerably smaller than its host. However, independent LRCs appear to have more freedom in the way they can act, and as LRC hosts suffer cuts and funding shortages, this is perhaps one of the governance structures that might be looked on more favourably in the future.

One of the most startling differences between LRCs is in the way they are set up in Scotland, England and Wales. I had not thought, when I started my job, that I would experience such noticeable differences between LRCs in these three nations (I am yet to visit Northern Ireland, although they only have one LRC for the whole area, and that in itself is a noticeable difference). I suppose in hindsight this should not be so surprising, because environment policy is devolved and so there are separate government bodies responsible for it.

When looking a little more in detail, it becomes obvious that there are separate challenges that face Scotland, England and Wales. For example, Scotland and Wales have a much smaller human population density than England. This of course means that Scotland and Wales have a much higher proportion of area suitable for interesting wildlife, but it also means there are fewer people to record it. In Wales, there are only four regional LRCs, so each one covers a larger area and have more recorders. The fewer number of LRCs may also be one of the reasons why Welsh LRCs appear to be a tight-knit, synergistic group.

Many of the challenges to the LRC community are long standing, and when we add it to the current economic climate, it paints a gloomy picture. Despite this, from what I have seen in Scotland so far, there is reason for optimism. The Scottish Biodiversity Information Forum will provide a focal point for dealing with biodiversity data issues, and has now appointed an officer (hosted by the Wildlife Information Centre), Christine Johnston, who will be a fulcrum for action.

I was part of a sectoral discussion in the run up to the launch of the SBIF and was impressed by the fact that it seemed possible to get attendance and input from so many of the people with an interest in wildlife recording, as they descended on Stirling from all over Scotland. This is something that very rarely happens in England. In fact many of the conferences I attend that cover England are only teleconferences, which are ok, and cheap and easy to set up, but lack the intimacy and intensity of face to face meetings.

So with this in mind, I am eagerly anticipating hearing progress from the SBIF, and will listen carefully to see if there are any lessons that can be spread to other parts of Britain. I would strongly advise Scottish recorders to provide input to the SBIF, interact with the LRCs, to seize this great opportunity to further the cause of biological recording in Scotland.

Tom Hunt is ALERC National Co-ordinator
Email [Tom.hunt@alerc.org.uk]

MSPs as SPECIES CHAMPIONS

On Valentine's Day earlier this year, The Wildlife Taskforce of Scottish Environment LINK, sent out a press release, aimed in particular at Members of the Scottish Parliament, to invite them to become Species Champions and put their name to a list of 93 birds, insects, animals and plantlife found all across the country. to enlist The gist of the press release was that:

“Threatened and endangered wildlife in Scotland are looking for Parliamentary affection this Valentine's Day. 93 **species** have been selected by Scottish Environment LINK's Wildlife Forum as being in particular need of some political tender loving care, due to a range of pressures such as habitat fragmentation, climate change and pollution. The resulting list is part of its **Species** Champion initiative, which aims to pair up MSPs with these unloved **species**.”

This initiative is part of celebrating the Year of Natural Scotland, and so far it has been astonishingly successful in attracting MSP champions, with 43 out of 129 MSPs having signed up by the time this issue of *Recorder News* goes to press.

The table below is from Scottish Environment LINK's website and lists the champion MSPs and their chosen species.

Species Champion / MSP	Species
Rhoda Grant MSP	Golden Eagle Wild Cat
Rob Gibson MSP	Rusty Bog-moss
Dave Thompson MSP	Sandeel
Liam McArthur MSP	Scottish Primrose
Dennis Robertson MSP	Capercaillie Corn Bunting
Aileen McLeod MSP	Red Squirrel
Graeme Dey MSP	Woolly Willow
Dave Stewart MSP	Great Yellow Bumblebee
Angus MacDonald MSP	Bog Sun Jumper Spider Eelgrass
Alison Johnstone MSP	Brown Hare
John Wilson MSP	Great Crested Newt
Drew Smith MSP	Common Toad
Elaine Murray MSP	Tadpole Shrimp Natterjack Toad
Claudia Beamish MSP	Sea Trout Forester Moth
Claire Baker MSP	Puffin Lesser Butterfly Orchid
Fiona McLeod MSP	Pond Mud Snail
Mary Scanlon MSP	Freshwater Pearl Mussel
Jamie McGrigor MSP	Narrow-Headed Ant
Nanette Milne MSP	Twin Flower
Christine Grahame MSP	House Sparrow
Bill Kidd MSP	Red Kite Common Pipistrelle
Richard Simpson MSP	Small Blue
Alex Fergusson MSP	Native Oyster
John Lamont MSP	Northern Brown Argus
Chic Brodie MSP	Chequered Skipper
Jayne Baxter MSP	Brown Long-eared Bat
Jim Hume MSP	Noctule Bat
Murdo Fraser MSP	Natterer's Bat Juniper
Stewart Stevenson MSP	Spiny Lobster
Alison McInnes MSP	Bottle Nose Dolphin

Aileen Campbell MSP	Large Heath Butterfly
Joan McAlpine MSP	Adder
Graeme Pearson MSP	Leislet's Bat
Richard Baker MSP	Common Frog
Patrick Harvie MSP	Minke Whale
David Torrance MSP	Common Lizard
Willie Coffey MSP	Cranberry
Stuart McMillan MSP	Basking Shark
Gordon MacDonald MSP	Bordered Brown Lacewing
Kenneth Gibson MSP	Pearl Bordered Fritillary Blue Whale
Christina McKelvie MSP	White Beaked Dolphin
Annabelle Ewing MSP	Mountain Sibbaldia
Maureen Watt MSP	Harbour Porpoise

Importantly, before contacting individual MSPs about support for any local projects, LINK's Wildlife Forum has requested that interested parties should first contact the sponsoring LINK member organisation, as they will be able to advise/ assist in the approach, depending on the issue.

These can be found by visiting [www.scotlink.org/index.php] and follow the link to "Species champions", then select the option "Species list". This will bring up a detailed table listing all the proposed 93 species, the political areas in Scotland where each species is mostly found, 'hotspots', threats, the sponsoring LINK member organisation, and finally the name of the sponsoring MSP.

If in doubt about who to contact, Rea Cris [rea@scotlink.org] will be able to signpost.

Just as a matter of interest, I did a small calculation on the percentage of MSPs from each of the political parties who have registered as species champions as we go to press:

- **Scottish National party - 21 out of 65 = 32%**
- **Scottish Labour - 10 out of 34 = 27%**
- **Scottish Conservative and Unionist party - 6 out of 15 = 40%**
- **Scottish Liberal Democrats - 3 out of 5 = 60%**
- **Scottish Green party - 2/ 2 = 100%**
- **Independents and no party affiliation - 0/ 5 = 0%**

Good for the Greens, but it is probably easier if you are only two. AMS

BOOK REVIEWS



Dickinson, Janis L & Bonney, Rick (eds) (2012), *Citizen Science: Public Participation in Environmental Research*. Cornell University Press. ISBN 978-0-8014-4911-6 Hb £30.95

I was interested when I received this book to review because Citizen Science certainly is a buzzword in biological recording circles these days. As it is edited by two senior staff at the Cornell University Lab of Ornithology, it concentrates on American projects and birds. But as these are some of the most mature citizen science projects and also the ones most likely to engage with large numbers of people they do appear to answer some of the questions posed regarding citizen science like, "Is it science?", "Who do we want to participate in our project?", "what relationship should we have with the citizens?".

The last question was addressed in a few chapters and suggested that large datasets should be freely available and citizens should be encouraged to come up with their own questions/ hypotheses and use the data to test them. This challenge to the idea of the citizen as solely an observer and generator of data, effectively to be the scientist is indeed an interesting one.

There is a good chapter on "Children and nature: following the trail to environmental attitudes and behaviours". It summarises the current research and gives pointers about how to engage with children and teenagers with "nature deficit disorder" through Citizen Science and through that stimulate a relationship with nature.

There is also the sole UK chapter by Professor Jeremy Greenwood about the British Trust for Ornithology and its participation in Citizen Science. It contains a very interesting historical look at Citizen Science before it gained that name.

As it is written by scientists, there is a strong push for Citizen Science always to be scientific, but it does recognise that there are many potential outcomes from the Citizen Science project, such as education, research, behavioural change e.g. environmental stewardship. These need to be carefully thought about in the project design phase.

What comes across is that there is no typical Citizen Science project, and they can be initiated in different ways and also have very different key outcomes. What they do all have in common is that they involve amateurs and their relationship to the project can evolve or change completely depending on the design of the project. E.g. an observer starts posing questions and through access to the data becomes the scientist. But only if data are accessible, an interesting point often debated in Scotland.

If you are involved in any way in Citizen Science this book will be of use to you, if only for the summary of the historical background to Citizen Science. But read on past that and you will find plenty to get you thinking.

Jonathan Willet



Dobson, Michael, Pawley, Simon, Fletcher, Melanie & Powell, Anne (2012) *Guide to Freshwater Invertebrates*. Freshwater Biological Association, Scientific publication No 68. ISBN 978-0-900386-80-0 Hb £33.00

As a young freshwater enthusiast I would scour bookshops for volumes covering the freshwater life of ponds and streams. Apart from some very general books on birds and plants there was not anything that covered the invertebrates that I was interested in. That was until I happened upon a copy of T.T. Macan's 'blue book' in a second-hand bookshop. This book, in its distinctive blue dust cover, was one of two books that revolutionised my understanding of freshwater invertebrates. My original copy has long since become unusable and it was with considerable excitement that I learned of the Freshwater Biological Association's plans to rejuvenate and re-issue this important text.

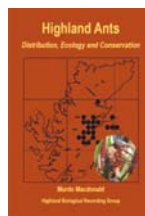
The Freshwater Biological Association (FBA) has been publishing taxonomic keys on freshwater species for over 75 years. This publication is however different in a number of respects to their other offerings. Firstly it is written as a general guide to freshwater invertebrates. Whilst taxonomic keys form a major part of the book, the text is generally accessible and the detailed line diagrams mean that it is easy to follow the descriptions. The keys are designed to allow identification to family with a minimum of magnification, although realistically for many of the groups a low-powered microscope will still be

required. The text is peppered with little anecdotes about the groups, which makes this book not only a useful tool when identifying specimens but it is also a good read – not something that is often said about taxonomic keys.

It is worth noting that this is the second general guide to freshwater invertebrates from the FBA. The first, *A guide to British freshwater invertebrates for biotic assessment* focuses on groups of invertebrates used to produce biotic indices of water quality. As a result it predominately covers the more obvious freshwater invertebrate groups and those from running water. This new title is much more inclusive with keys for a wide range of invertebrate families including copepods and water fleas. The inclusion of keys for true-fly (Diptera) and water beetle (Coleoptera) larvae is particularly welcomed as often the larval stages of these groups are ignored by freshwater workers.

It is rare to find a book that provides such a comprehensive introduction to the identification of a whole ecosystem in such an accessible manner. However this book from the FBA is just that. I would thoroughly recommend this book for anyone with an interest in freshwater ecosystems.

Craig Macadam



Macdonald, Murdo (2013) *Highland Ants: Distribution, Ecology and Conservation*. Highland Biological Recording Group. ISBN 978-0-9552211-4-9 Published as a .pdf file available from [www.hbrg.org.uk] for free.

I am a bit of an enthusiast for the yellow meadow-ant, *Lasius flavus* whose colonies are not uncommon in the Borders. These conspicuous mounds are often in ecologically more interesting areas, such as near northern brown argus butterfly breeding sites on species-rich grassland. So I was delighted to have opportunity to review *Highland Ants : Distribution, Ecology and Conservation*.

The book is aimed at stimulating interest and increasing the knowledge of ant diversity in Scotland, which it certainly achieved for me. The first six pages looks at the fascinating biology of ants including life cycles, food, associations with other insects, habitats and conservation of ants - especially important given increasing threats from development or changes in land management.

The bulk of the book is of course devoted to the Highland atlas. The data cover the period 1980-2012 with targeted recording occurring between 2005-2012. Records were completed for 351 x 10km squares or 85% (all of the most suitable ground) of the Highland area. There are 19 species accounts covering summary ID information, nest locations, habitat, alates (the winged sexual form), distribution maps and notes on UK status and distribution. Accompanying each account is a photographic detail of important distinguishing features of the species anatomy, which I found particularly pleasing. Details like that can be extra helpful for new recorders.

The last section is a guide to basic anatomy and field identification, with a key specific to the Highlands. This is a really useful chapter and follows the increasingly common practice of biological recorders and other naturalists publishing good ID information to stimulate further search and recording. Currently the web guidance for the UK looks a bit sparse - see [www.bwars.com] - I think 13 species accounts, given that 24 occur in Scotland. However, as a beginner, it is enough to be getting on with. Two recommended ID books are not very up to date (1927, 1977) and anyway, further research is clarifying new

species, so the inclusion of a bibliography at the end of the Highland manual is great for further sources.

I think this is the first local Formicidae **only** atlas in the UK. Not only are congratulations due for breaking new ground but also for all the recording effort, data processing, writing and publishing. The layout and style is also extremely accessible, providing an excellent model for future local guides of the Formicidae in Scotland. You can download a copy from [www.hbrg.org.uk/Atlases].

Sarah Eno

DATES for the Diary

- **Saturday 13 April – The Ancient Tree Hunt – Tree recording day at Scone Palace, Perth, 9.30-16.30.** Contact Clair McFarlan at [clairmcfarlan@gmail.com] or Tel. 07986 687055 to book a **free** place. See also [AncientTreeHunt.org.uk]
- **Thursday 18- Friday 19 April – NFBR Annual Conference held at Royal National Lifeboat Institution College, Poole, Dorset.** £65 for two days. Theme Biological Recording from the local Perspective. Contact Mr J A Newbould at [johna72newbould@yahoo.co.uk] or Tel. 01305 837384.
- **Friday 26 April – Bugs for Beginners: surveying and identification skills. Balallan House, Stirling. 10.00 – 16.00.** £12 per person. Booking essential. For details and to book contact Scott Shanks on Tel 01786 447504
- **Saturday 27 April - Highland Aspen Group AGM at Kincaig and field trip to Invertromie, Badenoch.** Dulverton room, Highland Wildlife Park. Contact [John.parrot@coillealba.org.uk] (Tel 01456 486426) or [emubed@btinternet.com] (Tel 01540 661962)
- **Tuesday 30 April – BioBlitz to survey the Tower Burn at Pittencrieff Park, Dunfermline, Fife. 10.00 – 15.00.** All welcome. Contact [Alexa.Tweddle@fife.gov.uk] for where to meet and other details.
- **Sunday 5 May & Sunday 12 May – Guided Reptile Walk to Loch Lee, Glen Esk, for adders and slowworms,** hosted by Friends of Angus Herpetofauna. Further details and to book a place contact Trevor Rose on 01674 671676 or 07778 830192 or email [secretary@thebhs.org]
- **Saturday 8 June - on World Oceans Day Solway Firth Partnership, Scottish Wildlife Trust (SWT) and DGERC are organising a BioBlitz at Brighthouse Bay near Kirkcudbright.** contact Mark Pollitt (info@dgerc.org.uk) or Tel. 01387 760274.
- **Saturday 8 June - Solitary Bee identification workshop at Balallan House, Stirling 10.00-16.00. £20 per person.** Booking essential. For details and to book contact Scott Shanks on Tel. 01786 447504.
- **Weekend 22 - 23 June - Glasgow Natural History Society Conference on Natives, Aliens and Reintroductions. Graham Kerr Building, Glasgow University.** Registration fee £15. See programme at [<http://www.glasgownaturalhistory.org.uk/2013conference.html>].

BRISC Annual Conference and AGM 2013 is scheduled to take place on Saturday 27 October at Newbattle Abbey, Dalkeith. Please put this date in your diary.

NBN News

Celebrating the present, looking to the future

On the 20th March 2013, the NBN held an event at the Natural History Museum in London to celebrate the achievements of the partnership, to showcase innovative new technology and to look forward to what can be achieved in future by working together. The event opened with a short address from the NBN Turst Patron, Lord Selborne, and Chairman, Michael Hassell, Partner organisations ran displays and demonstrations to show how biodiversity data are being used in practical ways, with a particular focus on non-native species, ecosystem-services, species and habitat conservation, statutory reporting, policy making, public engagement and land management. The importance of volunteer recorders was emphasised throughout the exhibition.

The event was attended by 150 guests, including government ministers, Chairmen, and CEOs of partner organisations, academics, conservation specialists and journalists. The event was part of National Science and Engineering Week.

A similar event will be held in Scotland later this year; further details will be released shortly.

News from the NBN Species Dictionary

The NBN Species Dictionary has recently changed its name to the UK Species Inventory. The reason for this is that the team at the Natural History Museum decided that a taxonomic database is not really a "Dictionary", hence the change to "Inventory"

Chris Raper took over from Charles Hussey as Manager of the UK Species Inventory last year and he has been busy working on the backlog of ad hoc amendments to the master taxonomic hierarchy table. This has cleared a lot of little problems that had been holding users back and tackled lots of typical issues, such as new species, changes in synonymy and suspected errors.

The next few months will see Chris busy with several major checklist updates that are in the final stages of preparation. Some highlights will be long awaited updates to the checklists of lichens & lichenicolous fungi (British Lichen Society), marine organisms (MSBIAS), Diptera (Peter Chandler), Coleoptera (Andrew Duff) & Ichneumonidae (Gavin Broad.

NBN Gateway News

New NBN Gateway version 5

The first release of the new Gateway was made available on a test website in December, but unfortunately we have encountered technical problems resulting in slow performance which we are currently working to resolve. In the meantime, the full functionality of the "current" NBN Gateway has been re-enabled at <http://data.nbn.org.uk>, enabling data providers to administer datasets and organisations, and allowing users to set up new accounts, apply for access and comment on records. Any changes made will be carried over to the new NBN Gateway when the performance issues have been resolved.

Data loading has also resumed on the current site, with new and updated datasets becoming available at the end of March. These include two datasets from the National Trust for Scotland of species recorded on NTS properties from 1800 to 2013, and updated datasets from the Highland Biological Recording Group.

Web services will continue to be run from the current NBN Gateway and web service users will not notice any change in performance and do not need to take any action.

The technical issues we have encountered are frustrating, but we remain certain that when we have overcome them and when the rollout is complete, the new functionality will enhance your experience of using the NBN Gateway. If you have any queries please contact the technical team for help on access@nbn.org.uk. Thank you for your continued support.

Did you know?

Biodiversity data in a global context

The NBN Gateway is the UK node of GBIF (Global Biodiversity Information Facility), making UK data available to support research, conservation and policy making in an international context.

NBN data providers recently supported the Belgian Government with a research project on alien invasive species. One objective of the project was to provide detailed maps on the establishment potential for a set of study species. This was done by 'risk mapping', which involved deriving explanatory environmental variables from the species' known distribution and projecting these onto the region at risk – in this case the Benelux. The researchers were especially keen to include species records from the NBN in their research due to the high quality of data available.

GBIF is also playing a key role in the development of a European gateway for biodiversity information. The European Biodiversity Observation Network (EU BON) is a € million, EU-funded research project which aims to advance biodiversity knowledge by developing a portal to integrate a wide range of biodiversity data – from on-ground observations to remote sensing datasets – making it accessible for scientists, policy makers, and the public.

GBIF's specific contributions, costed at nearly €300,000, include helping to improve data standards and interoperability, providing a metadata registry and catalogue, and providing access to data through robust web services.

In Practice

iRecord data download page for Local Records Centres

The goal of the iRecord online recording and verification system (www.brd.ad.uk/iRecord) is to make it easier for wildlife sightings to be collated, checked by experts and made available to support research and decision-making at local and national levels. iRecord exports data in the NBN exchange-format and there is a regular flow of verified data from iRecord to the NBN Gateway for some species groups.

However, we realise that Local Environmental Records Centres need instant access to records in their area so they can be used to inform local decision making. We have therefore added a feature to iRecord to enable LRCs to easily download records within their LRC boundary. This was announced to the LRC community in February, and several have already set up user accounts to access the data.

The 'top copy' of the data remains in the iRecord database and the record ID remains with the dataset. The preferred route of data dissemination from iRecord remains via the NBN Gateway, but the iRecord LRC download page has been added as a temporary measure until the Gateway is able to make all records, including unverified records, available promptly to key user such as LRCs.

There are now over 100,000 records in the iRecord database. Recent improvements to iRecord include the ability to summarise records by species, plot records of two or more species on the same map and to maintain a list of the sites you visit regularly to make it easier to input records from these sites and to enable summary reporting of the species found at each site. Attribute fields for recording the life stage and sex of a specimen have been added to the main iRecord forms in response to requests from users. These fields are not compulsory but will enable recorders to capture this if they wish.