

Biodiversity News

Issue 68

Spring Edition



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From *the* Editor



© Cathy Munonyedi

Welcome to the 2015 spring edition of Biodiversity News!

I have received a great number of fascinating articles for inclusion in this edition. I would like to extend my appreciation to everyone who has contributed as your continued interest and commitment to this newsletter make it enjoyable to publish.

As ever, we have some exciting articles that show the hard work of our readers; Rob Wolton's article (on page 8) summarises his results of recording the species in a hedge on his farm for 2 years. It really illustrates the importance a single hedge can be for biodiversity.

Also the successful conservation efforts at Highgate underground station that has seen winter roosting bat increase ten-fold since the project began.

Please head to page 26 where Becky Shenton, the Panshanger Park Forest School Officer is providing an amazing opportunity for the Forest School children as they will be enjoying their lessons outdoors this term.

A huge thank you to Iain Leach, whose stunning photo of a Duke of Burgundy Butterfly is this edition's front cover. The photo is part of the article on page 22 that has seen the UK's most rapidly declining butterfly brought back from the brink of extinction in Sussex. The project is lead by wildlife charity Butterfly Conservation as the Duke of Burgundy was only seen in the county eight times during 2003!

Another thanks to Cathy Munonyedi as her beautiful photo that was taken on a day out at Kew Gardens with her family can be seen on this page,

Enjoy!

Best wishes,
Katie

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Natural Capital 3rd Report

On the 27th January, the [Natural Capital Committee](#) released their third State of Natural Capital report.

The report states that England's natural capital – the elements of the natural environment which provide valuable goods and services to people such as clean air, clean water, food and recreation – is in long-term decline. Successive “**natural capital deficits**” have built up a large natural capital debt which is holding back economic growth and wellbeing. If economic growth is to be sustained, natural capital has to be safeguarded.

For example, poor air quality is estimated to cause 40,000 premature deaths per annum in the UK. It not only affects wellbeing, but has a significant impact on the productivity of the economy (costing around £5bn per annum through lost work days).

The challenge of protecting and improving natural capital is not insurmountable. To improve the environment within a generation, the Natural Capital Committee advises that Government, working closely with the private sector and NGOs, should develop a long-term strategy and corresponding 25 year plan.

Carefully planned investments in natural capital, targeted at the best locations, will deliver significant value for money and generate large economic returns. These are competitive with the returns generated by more traditional infrastructure investments. To illustrate this, the Committee reviewed a suite of cases in England which could form the basis of a natural capital investment programme. The Committee has found a strong economic case for:



NCC “Prof Dieter Helm, Chairman of the NCC, introduces the report”.

- ◆ **Woodland planting** of up to 250,000 additional hectares. Located near towns and cities, such areas can generate net societal benefits in excess of £500 million per annum;
- ◆ **Peatland restoration** on around 140,000 hectares in upland areas. This would deliver net benefits of £570 million over 40 years in carbon values alone. Further work is needed to determine water quality, recreation and wildlife values. Including these will significantly increase the net benefits of such investments;
- ◆ **Wetland creation** on around 100,000 hectares, particularly in areas of suitable hydrology, upstream of major towns and cities, and avoiding areas of high grade agricultural land. Benefits cost ratios of 3:1 would be typical, with up to 9:1 possible in some cases;
- ◆ **Restoring commercial fish stocks**, particularly white fish (like cod) and shellfish, which remain considerably below optimal levels. The Committee recognises that reducing the level of fishing effort to allow these stocks to recover will have short-term impacts on the fishing industry, but the long-term gains are potentially large, securing jobs in the industry for generations to come. Investing in measures to restore certain stocks of shellfish could deliver benefit cost ratios in excess of 6:1;
- ◆ **Intertidal habitat creation** to meet objectives set out in Shoreline Management Plans. These areas provide a wide range of benefits including coastal flood protection (and can reduce costs of maintaining concrete defences), carbon storage, areas for wildlife and the provision of nursery grounds for important commercial fish stocks.

For more information on the Committee and its work, please visit its [website](#) or get in touch with the [NCC Secretariat](#).

Alastair Paton, Member of NCC Secretariat, DEFRA



£1.4 million Heritage Lottery Fund grant to protect pollinating insects

The Heritage Lottery Fund (HLF) has announced support for the UK-wide biodiversity project - Polli:Nation, a programme which supports schools and communities in helping to protect the future of our seriously dwindling pollinating insect population. A grant of £1.4m has now been confirmed by HLF following the successful development of the project.

The award comes after the publication of a report by the Natural Capital Committee that showed the decline in our natural environment is harmful to the economy. 'Free' pollination by bees and other insects has previously been valued at £430m to UK agriculture each year* and is crucial to the survival of our countryside but pollinating insects are in severe decline. One of the main drivers of this decline is thought to be the loss of natural and semi-natural habitats.

The Polli:Nation project will engage pupils, teachers and volunteers in 260 schools across the UK to transform school grounds and local community spaces into pollinator-friendly habitats. Children and young people will learn all about pollinators and make changes to their local environments to improve opportunities for these precious insects.



© Learning through Landscapes.



© Learning through Landscapes.

Launching the first UK-wide pollinator survey, Polli:Nation will equip children and local communities with the tools and skills to help scientists build a picture of the state and potential of habitats for our pollinators.

Juno Hollyhock, the Executive Director of Learning through Landscapes explains, "We are delighted that the Polli:Nation project has been funded by the Heritage Lottery Fund, and that 260 schools can now transform their grounds to become pollinator-friendly spaces. Schools are at the heart of our communities and we hope through the Polli:Nation survey that children and adults alike will be inspired to make the changes needed to help our pollinating insects'.

"We believe that this important and inspiring project will help children and young people to learn about the development of their natural environments, both in and out of their school grounds, teaching them that the changes we make to our surroundings can have a profound effect on critical issues such as our deteriorating habitats."

Drew Bennellick, HLF's Head of Landscape and Natural Heritage, said: "The huge contribution that our pollinators make to the country often goes unacknowledged but recent research has shown that they not only help our environment flourish but also have a real economic impact. We need to do all we can to halt the decline in pollinator habitats and schools can play a crucial role in turning the tide. The project reaches an impressive 260 schools nationwide giving it the potential to make a real difference. But it will also equip children with the skills and knowledge to connect to nature, something which the Heritage Lottery Fund sees as invaluable if we are to protect our pollinators for the future."



© Juno Hollyhock

Learning through Landscapes has developed the Polli:Nation project along with other sector partners including The Field Studies Council, Buglife, Butterfly Conservation, OPAL Imperial College London, Stirling University, Bumblebee Conservation and The Conservation Volunteers.

For any enquiries or information about how to get involved, send your emails to pollination@lfl.org.uk and follow @lfl_pollination for further announcements.

Tom Williams, Media Officer, Heritage Lottery Fund



IPBES-3 2015: Assessing the Planet's State of Biodiversity and Ecosystems

On the 12th -17th January around 700 delegates from 123 Governments and around 150 scientific, civil society and private sector organisations converged on Bonn, Germany, for the third IPBES plenary session. The UK was represented by members of Defra, the Joint Nature Conservation Committee (JNCC) and Professor Sir Bob Watson, who is also a vice-chair of the Platform.

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) mission is to "assess the state of the planet's biodiversity, its ecosystems and the essential services they provide to society" to provide policymakers with a scientifically credible, reliable and independent source of knowledge that takes into account the complex relationships between biodiversity, ecosystem services, and people. The need for the provision of sound scientific information to policymakers is becoming increasingly urgent to address the challenge of reversing declines in biodiversity and ecosystem services.

The IPBES conceptual framework draws out the connection between nature (biodiversity and ecosystems) and a good quality of life (human wellbeing) through nature's benefits to people (ecosystem good and services).

Discussions at IPBES-3 focused on each of the key areas of the work programme (shown in the below figure) as well as capacity building, indigenous and local knowledge, and financial and budgetary arrangements. The third plenary was highly productive and marked progress on a wide raft of issues concerning each of these areas. During the discussions the strong connections between the regional assessments and the thematic assessments, such as those on land degradation, invasive alien species and sustainable use of biodiversity became increasingly clear. To ensure effective linkage between the regional and thematic assessments the decision was made to embed experts with knowledge in these thematic areas within the Regional Assessments process.



Andy Stott, DEFRA, UK speaking at the Plenary (Photo courtesy of IISD Reporting Services/ENB ,Photo by Franz Dejon)

Regional Assessments
<ul style="list-style-type: none"> • Four Regional assessments; The UK is part of the Europe and Central Asia region
Global Assessment
<ul style="list-style-type: none"> • Holistic report drawing on regional, methodological and thematic assessments
Thematic assessments
<ul style="list-style-type: none"> • Land Degradation and Restoration • Pollination and Food Production • Sustainable Use of Biodiversity • Invasive Alien Species
Methodological assessment
<ul style="list-style-type: none"> • Scenarios and Modelling • Valuation
Task Forces
<ul style="list-style-type: none"> • Indigenous and Local Knowledge systems • Capacity Building • Knowledge and Data
Communication and Outreach
Stakeholder Engagement



In 2015, as well as completing the thematic assessment on pollinators, pollination and food production, and the methodological scenarios and modelling assessment, work will also begin on delivering four regional assessments of biodiversity and ecosystem services, where the UK falls within the assessment of Europe and Central Asia. The Platform will also commence work on an assessment on land degradation and restoration and the scoping process will begin for the global assessment, and the thematic assessments on invasive alien species and on sustainable use of biodiversity.

Delivering the work programme will require contributions from thousands of experts from around the world in a broad range of disciplines. These include ecologists and biologists, social scientists, policy and conservation practitioners, environmental economists and indigenous knowledge holders. Expert input will be integral to the assessments, in both their design and creation, and during the review process. Experts can be nominated by governments or relevant stakeholders.

The [UK IPBES stakeholder hub](#) provides a central communication point for sharing details of the IPBES process to the wider stakeholder community. It is regularly updated and includes information on current activities, feedback on the latest plenary session and the UK process for nominating experts in response to calls from the IPBES Secretariat (of which there have been three to date). Opportunities for engagement in the IPBES process are sent out via the hub mailing list [[register here](#)].



Professor Sir Bob Watson, Co-Chair, UK (Photo courtesy of IISD Reporting Services/ENB, Photo by Franz Dejon)

Further information on the IPBES work programme and its deliverables is available on www.ipbes.net.

Amy McDougall, Biodiversity Support Officer, JNCC



The remarkable biodiversity of a hedge – 2,065 species and rising!

Even though hedges are a priority habitat, their importance for wildlife is often overlooked. This is despite many studies showing that they are vital for farmland birds and mammals, as well as for many insects, including pollinators. Perhaps this is because in the UK we are fortunate enough to still have well-hedged landscapes, in contrast to most other northern European countries where they've been removed wholesale. If they were rare here, surely we would value hedges more highly!

To see just how important a single hedge can be for biodiversity, and with a great deal of help from experts, I recently carried out a two year bioblitz of a single hedge on our farm in the heart of Devon. Running along one side of our main access lane, 85m long, and species-rich in terms of its shrubs, I chose the hedge simply because it's very close to our front door. I would stress that it's in no way a special hedge - there are thousands like it across Devon.



Young dormouse 1, Study hedge, Locks Park, 29 October 2013 © Robert Walton

And the result? **So far, 2,065 species have been identified from the hedge, a staggering figure.** My rule was to count only species big enough to see with the naked eye, and they had to be within 2m of the tips of the shrubs or trees. So cormorants or swifts flying overhead were not included! The true number of qualifying species is, I believe, likely to be closer to 3,000. The Natural History Museum has sitting on a shelf somewhere bottles of parasitic Hymenoptera (wasps) from the hedge awaiting identification – my hope is that DNA analysis will make this possible soon. There are certainly many hundreds of such species in these bottles, and others with unidentified midges and related flies, while I did not cover smuts or rusts at all – indeed fungi are much under represented.



Malaise trap set at study hedge 14 July 2011 © Rob Walton

A breakdown of the identified species is shown in figure 1. The tally is dominated, as may be expected, by invertebrates, especially insects. The most species-rich taxonomic group is the true flies, with 832 found. To put this in context, for the fly families covered, that is 17% of the British fauna – likewise, 17% of British moths were found. The number of beetles recorded was much lower, at just 3%, but this almost certainly reflects inadequate sampling. **Overall, it's evident that a single Devon hedge may harbour about 12% all the insect species known in the UK!**

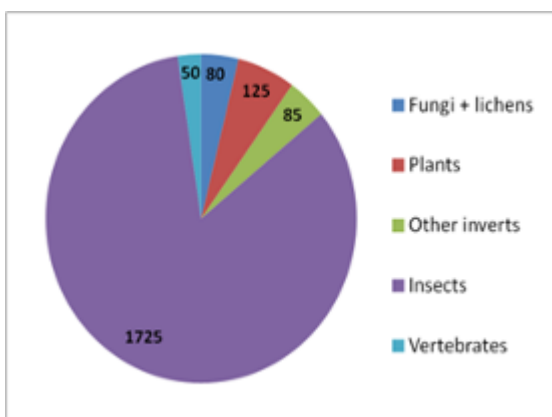


Figure 1. Breakdown of the 2,065 species identified from the hedge

Of course, most species recorded are ones that are common or widespread across lowland Britain, but nevertheless many scarce or threatened species were found. These included 27 flies (using the tough IUCN criteria), 6 red-listed and 4 amber-listed birds, and breeding hazel dormice.

But are all these many species benefiting from the hedge? Perhaps it is just acting like a drift net? My own observations, discussions with researchers, and a detailed literature review suggest the former – the great majority are finding valued resources in the hedge. These may be places to breed (for example larval microhabitats), food (e.g. nectar or berries), mates, or shelter and protection from harsh weather or predators. Some may be using the hedge as a safe flyway through the landscape, as has been shown for bumblebees and bats. In short, the hedge is increasing the chances of survival and reproduction for most.

The next question is why is the hedge so species-rich? Analysis of the various species assemblages present strongly suggests that this largely because the hedge is well structured, with not only a shrub layer, but also



with a few emergent trees (although not mature ones), a central bank (as is typical of West Country hedges), a shall ditch and herb-rich margins on both sides. Other important factors likely to explain the high biodiversity were the presence of a range of habitats nearby, such as farm ponds and small woodlands, the species richness of plant communities present in the hedge, and the high degree of landscape connectivity – an intact hedge network extends for tens of miles in all directions.

In conclusion, it is clear that well-structured hedges, when placed in well-connected landscapes which contain a range of habitats, can benefit a remarkably high diversity of wildlife – on par with that of many nature reserves. Support given to farmers to care for their hedges, whether through advice or agri-environment schemes, can do much to assist the diminishing wildlife of our countryside.

For further information see:

Wolton, R.J., Bentley, H., Chandler, P.J., Drake, C.M., Kramer, J., Plant, A.R. & Stubbs, A.E. 2014. The diversity of Diptera associated with a British hedge. *Dipterists Digest* 21, 1-36.
Devon Hedge Group and Devon County Council. 2014. *Devon's Hedges: conservation and management. Second edition.* Devon Hedge Group. 98pp. ISBN 978-1-84785-43-0.

Robert Wolton
Locks Park Farm, Hatherleigh, robertwolton@yahoo.co.uk
Devon Hedge Group www.devon.gov.uk/hedges
Hedgeline www.hedgeline.org.uk
Dipterists Forum www.dipteristsforum.org.uk



Arctophila superbiens, Locks Park, 9 Sept 08 © Rob Wolton



Argyra diaphana, Locks Park, 23 May 23 © Rob Wolton

British Beauty

Protecting the country's most iconic landscapes through Plantlife's Important Plant Area programme

How many of us know what an Important Plant Area, or IPA, is?

Handily there's a clue in the name...

IPAs are internationally recognised hotspots for wild plants, nature sites of exceptional botanical richness. They have been selected by a partnership of 16 organisations, bringing botanical expertise from across the UK and are endorsed by national conservation organisations including the RSPB and The Wildlife Trusts, and by UK government bodies including Natural England, Scottish Natural Heritage and Natural Resources Wales. In the UK, they make up approximately 7% of our total land area and, maybe unsurprisingly, are largely coincident with SSSIs and SACs.

Wild plants are the building blocks of habitats, supporting all other forms of wildlife. The orange tip butterfly is dependent on the cuckoo flower, for example. Birds such as the curlew feed on invertebrates, which in turn need the presence of a diverse grassland flora.

© Camilla Keane, Plantlife

They are vital in our lives too. The UK National Ecosystems Assessment shows plants and fungi are essential in 11 out of 12 ecosystem services, including flood prevention, carbon capture and food production - more than any other group of wildlife. Yet despite their importance, the UK's IPAs are not being managed effectively for their botanical richness.

The importance of Plantlife's IPA programme, therefore, cannot be over-stated.

Under the Global Strategy for Plant Conservation, of which the UK is a signatory,





the identification and management of IPAs is a key tool in conserving plant diversity. In Europe, the facilitation of this work is led by Plantlife International and IUCN and is an important contribution towards EU Natura 2000 objectives and the EU 2020 Biodiversity Strategy

So it's good news that, thanks to funding from the Esmée Fairbairn Foundation, Plantlife is expanding our Important Plant Area (IPA) work in England and Wales.

The new programme aims to:

- ◆ Raise the profile of IPAs and celebrate the importance of botanical diversity
- ◆ Ensure the importance of IPAs is appropriately reflected in partner's work, from conservation policies to practical conservation delivery.
- ◆ Conserving plant diversity and other wildlife within the IPA network by making sure wild plants are at the centre of long-term conservation recovery plans
- ◆ Demonstrating and developing appropriate management techniques to practically support the better management of IPAs.

Camilla Keane, Plantlife

Historic Orchards – Fruitful Places for People and Wildlife

The Tay Landscape Partnership (TayLP) is a four year programme delivering 29 projects around the confluence of the Rivers Tay & Earn. Many of the projects will benefit local wildlife and activities include ecological surveys, habitat creation and skills training. In particular, a number of projects focus on orchards.

The fertile land around the inner Tay estuary, especially the Carse of Gowrie, was once famous for its orchards. Many fruit varieties are named after local places such as Lass o' Gowrie, Port Allen Russet and Megginch Favourite. Sadly, only a few fragments of these once extensive orchards remain, but TayLP are working alongside orchard keepers to restore them.

Traditional orchards can be havens for wildlife, supporting hundreds of species of birds, mammals, invertebrates, fungi and wild plants. If managed in the right way, they can become productive places, producing fresh, local food, whilst teeming with wildlife. One of their orchard keepers is using a horse drawn hay cutter, the only one of its kind in Scotland, to manage the meadow beneath her trees.

To support the restoration of the historic orchards TayLP are running a series of Volunteer Work Parties and Skills Training Sessions covering a range of topics, including; pruning, grafting, picking & juicing, and pests & diseases. They will also be setting up fruit tree nurseries to grow local and heritage varieties to restock the historic orchards, and they are currently looking for a site for new community orchard. Each year they host a Fruit Festival to celebrate the fruit growing heritage of their area and inspire people to get involved.

If you'd like to find out more, visit www.taylp.org or email Catriona Davies, TayLP's Access & Biodiversity Officer at Catriona.Davies@pkht.org.uk.

*Catriona Davies • Access & Biodiversity Officer
•Tay Landscape Partnership*



Fruit picking work party © Tay LP



Pruning young fruit trees work party © Tay LP



The horse drawn hay cutter in action © Tay LP



Tomorrow's Biodiversity

Tomorrow's Biodiversity (Tom.bio) is a Field Studies Council (FSC) project running from 2013 to 2018 and funded by the Esmée Fairbairn Foundation. The initial two year research phase has now ended and the delivery phase just begun, making this an ideal time to step back and review the project's rationale, aims and future plans.

Broadly, Tom.bio's objectives are to identify the national gaps in biological identification and monitoring skills, and to create and facilitate new resources and training programmes to try and close these gaps.

Why is this important?

Well, in order to understand and conserve the natural world's incredible diversity, we need to know **what species we've got, where we've got them, and how they fare over time.** Knowing which species are present in an area helps us monitor not only the health of the ecosystem and the success of our conservation efforts, but also other factors affecting us all such as climate change or the ecosystem's ability to deliver economically valuable 'services' (e.g. soil fertility, flood protection, carbon storage). Having sustainable, long-term biological recording is therefore vital; having people with the skills to carry out this recording is essential.



Spider hunting © Charlie Bell

However, many taxa which have the potential to contribute greatly to our understanding of conservation, environmental change and ecosystem services are distinctly un-glamorous – think earthworms, spiders, springtails, mites, mosses. Such groups are under-represented in national monitoring and recording, due to their un-charismatic looks, small size, the difficulties of finding and identifying them, the specialist equipment needed, or a combination of these things. Consider how much participation there is in UK bird recording (the Breeding Bird Survey, the Wetland Bird Survey, the Constant Effort Ringing scheme, the Big Garden Birdwatch etc, along with vast numbers of more *ad hoc* records submitted by birders). No surprise, given birds' beauty, charisma, and the relative ease with which they are seen and identified. In contrast, it's usually pretty hard for most of us to remember the last time someone invited us to grab a microscope for a spot of earthworm recording! This is where Tom.bio comes in: developing resources and training to improve ID skills for those vitally important - but under-resourced – taxa, and helping to facilitate their long-term monitoring and recording.

Tom.bio's initial consultation and research phase, undertaken by Project Officer Dr Rich Burkmar, identified various gaps in UK biological recording and consequently developed exemplar projects focused on spiders, soil mesofauna, earthworms and bryophytes. These exemplar projects will include the creation of multi-access keys; the development of training programmes for recorders and trainers; the publication of identification guides; and the use of data visualisation software. They will be delivered in partnership with national and local recording organisations and experts, such as the Shropshire Spider Group and the British Bryological Society. This delivery stage will build on the legacy and experience of two recent FSC projects, [Invertebrate Challenge](#) and [Biodiversity Fellowship](#).

It's an exciting time for Tom.bio and there's lots going on – and I encourage the naturalists among you to consider branching out into some of our under-recorded groups of species! For updates, and to find out about upcoming training opportunities, visit our new website (www.tombio.uk) and follow the project on Twitter (@FSCTomBio).

Charlie Bell
Tomorrow's Biodiversity Project Assistant



Natural Talent UK – mind the skills gap!

A recognised shortage of specialised conservation skills has prompted the UK-wide roll-out of a highly successful training scheme from The Conservation Volunteers. The Natural Talent apprenticeship programme was originally focussed in Scotland and Northern Ireland and funded by the Heritage Lottery Fund. The Natural Talent UK programme offers 12 lucky people the opportunity to become expert in 'less charismatic' taxonomic groups and/or habitats, helping to protect lesser-known species and create awareness of their habitats. Trainees will also encourage volunteers and communities to become more active in surveying, mapping and managing local sites for increased biodiversity.



Diatom trainee Christopher Jones samples Merseyside waters Photo © Geraldine Reid

The programme responds to ecological skills shortages identified by The House of Lords Select Committee on Science and Technology and the Chartered Institute of Ecology and Environmental Management. The © IEEEM report *Ecological Skills: Shaping the profession for the 21st Century (2011a)* states: 'the evidence for an ecological skills gap is compelling and alarming'. A failure to address the issue 'could significantly undermine the UK and Ireland's capacity to meet their post-Nagoya 2020 and 2050 biodiversity targets.'

Funded through the Esmée Fairbairn Foundation, Natural Talent UK builds upon existing partnerships whilst exploring additional areas of study with new partners. Over the next 24 months, TCV will deliver twelve new, 12-month fully-funded Natural Talent traineeships.

In Liverpool, Christopher Jones is studying diatom taxonomy at the World Museum and aims to recruit 100 Merseyside shore-line champions. Ceri Watkins at Oxford University's Natural History Museum is creating an inventory of saproxylic insects in Wytham Woods alongside public events on the ecology and conservation of these 'at risk' invertebrates. Liam Olds is placed with the National Museum Wales and Bristol University as he researches biodiversity on colliery spoil tips. Trainees are also busy in Scotland and Northern Ireland on Marine Invasive Non Native Species, Entomology (specialising in Carabid beetles, Spiders and Lepidoptera) and Lichens as Air Quality Indicators.



Selfie with Carabidae: colliery spoil trainee Liam Olds at National Museum Cardiff

From its inception in 2006, Natural Talent has worked with outstanding partners and inspirational experts across the UK to deliver a hugely successful programme. There are now 44 highly skilled apprentices based across the United Kingdom, many of whom are now employed in the conservation sector and using their skills and expertise in their current roles. 7 of the apprentices have gone on to further education. Previous apprenticeships have included hymenoptera, soil ecology, fungi, bryophytes, lichens, micro-moths, upland ecosystems and coleopteran, all of whom were funded the Heritage Lottery Fund.



Saproxylic insect trainee, Ceri Watkins, engages a new generation at the Natural History Museum, Oxford. Photo © Amoret Spooner

The Conservation Volunteers are now looking for placement providers, experts and mentors for their 2016 programme. Placement providers contribute in-kind support in the form of desk space, IT, daily supervision, access to resources and expert tuition. In return, they receive a fully-funded trainee who will very quickly become an integral part of their team and contribute to the protection of our Natural Heritage.

For further information contact j.mcfarlane@tcv.org.uk or go to www.tcv.org.uk/scotland/learning/natural-talent-traineeships

John McFarlane, The Conservation Volunteers





Mineral Products Industry Uniquely Placed to Contribute to Biodiversity Enhancement

Biodiversity is a core value for Mineral Products Association (MPA) members. MPA wants our industry to lead the way in helping to contribute to England Biodiversity 2020 Strategy outcomes, going above and beyond minimum requirements to benefit nature and wildlife.

Active and restored quarry sites can and do provide habitats for a wide variety of species and MPA members are uniquely placed, as managers and restorers of land, to help enhance biodiversity. Our industry already has a proven legacy of outstanding habitat creation and wildlife promotion through quarry site management and restoration.

MPA members want to build on this biodiversity legacy and realise their potential. The industry has already delivered over 5,200 hectares of priority habitats through the restoration of quarries, the equivalent of at least five 'Richmond Parks', with a further 5,600 hectares planned.

In 2011, MPA launched its Biodiversity Strategy which has been guiding the Association's and members' action. Looking back over just the last three years we can demonstrate some real progress and successes:

To Date in 2015

At the beginning of this year, MPA launched its Restoration and Biodiversity Awards 2015. The Restoration Awards recognise excellence in returning quarried land to beneficial after-uses. With a pedigree stretching back more than 40 years, the scheme has rewarded a range of mineral operators across the UK, with the highly coveted top accolade: becoming the Cooper-Heyman Cup winner.

The Biodiversity Awards have been held twice since 2011 and recognise the exceptional achievement and future potential of the mineral products industry in protecting and enhancing the nation's biodiversity. This year, the existing categories of Innovation, Landscape Scale Restoration and Individual Contribution are joined by Planned Restoration Schemes – those that have been approved but not yet implemented. The Awards ceremony will take place on 14 October 2015 at the Royal Society in London.

At the same time, we also launched our inaugural MPA Nature Photo Competition 2015 for all employees from our member companies, to celebrate these members' achievements and get employees directly engaged with the issue of biodiversity. Images entered can be of species and habitats found on operational quarries, partly or fully restored sites. It is planned to use the best 12 images in the MPA Nature Conservation calendar for 2016, as well as on the MPA website and Mineral Products Today magazine. Winners will be announced and showcased at the Restoration and Biodiversity Awards 2015.

In January 2015, MPA renewed its Memorandum of Understanding (MoU) with the Bumblebee Conservation Trust (BBCT) which has been in place since 2012. Since November 2012, BBCT has visited five quarries and has learnt through the visits how quarries can be surprisingly useful places for wildlife. There are many different habitats on quarries and each one can be managed sensitively for bees.

BBCT isn't MPA's only nature conservation partner. MPA has also had an MoU with the Freshwater Habitats Trust since 2012 and valuable NGO partnerships are in place with the Bat Conservation Trust, RSPB, Nature After Minerals and the National Biodiversity Network.

MPA worked with some of these partners to host a biodiversity zone within the Concrete and Masonry Pavilion at Ecobuild 2015. The Bumblebee Conservation Trust was present to promote their work with MPA



Lafarge Tarmac's Bayston Hill Quarry, Shropshire County Council - Runner up for Landscape Scale Restoration in the MPA Biodiversity Awards 2013.



members; and information from Nature After Minerals and the Freshwater Habitats Trust was also available.

2014

Nigel Jackson, Chief Executive MPA, presented members' invaluable biodiversity work at the high profile 'Conference for Nature' in September 2014, hosted by the RSPB, alongside Sir David Attenborough and The Deputy Prime Minister. The event followed on from the launch of the State of Nature report in 2013 and the aim was to bring together leaders from all sectors to look at game changing and innovative projects with nature and conservation at their hearts. As well as featuring MPA members' work, the Conference looked at a number of other high profile projects, showcasing how sustainability and nature go hand in hand with business.



Aggregate Industries UK Ltd's Torr Works Quarry, Somerset - Highly Commended for Landscape Scale Restoration in the MPA Biodiversity Awards 2013.

MPA's membership of, and contribution to, the All Party Parliamentary Group on Biodiversity also continued. We progressed with collating data on minerals site habitat creation to demonstrate members' contribution to England Biodiversity 2020 Strategy outcomes and feed into the Government's Terrestrial Biodiversity Group. MPA also explained how restoration can enhance biodiversity at the Natural England Development Industry Group. In addition, the Association organised a Birdstrike workshop with 40 mineral, aviation, airport, MoD, planning and NGO delegates, and has recently prepared guidance incorporating the findings of the event.

The partnership between QPA Northern Ireland (which is affiliated to MPA) and the RSPB saw 10 member sites in Northern Ireland sign up to the RESTORE initiative. As a result of the MoU between MPA and BBCT, BBCT visited Wainwright's Moon Hill quarry in Somerset, an MPA member, and delivered a presentation to over 50 attendees at the Earth Science Centre. The room was full and the enthusiasm and interest for bumblebees was very clear, both during and after the presentation. BBCT also attended Moon Hill quarry's open day on 6 September to encourage more people to plant flowers for bees.

2013

This was the year MPA launched its National Nature Park – a nationwide network of 50 quarry sites totalling over 4,000 hectares which have been restored for wildlife and are accessible to the public, with a range of facilities including nature trails, viewing hides and visitor centres. MPA is working all the time to increase the number of locations contributing to its National Nature Park.

The National Nature Park was launched at the highly successful Restoration and Biodiversity Awards 2013 event where DEFRA Minister, Lord de Mauley, praised the industry's progress and partnership.

Biodiversity offsetting is an important topic and MPA was invited to a discussion session with DEFRA's Secretary of State on this issue and has helped develop policy. QPANl members partnered with the Woodland Trust in a Northern Ireland tree planting initiative.

Nigel Jackson, Chief Executive MPA, said: "MPA totally supports the aim of protecting and enhancing the state of nature and biodiversity delivery across the UK and EU and will play its part where it can. Supporting biodiversity is a key aim for MPA: it is a key part of our licence to operate. It also makes good business sense to restore sites to a high quality and help deliver national and local environmental priorities and biodiversity targets. MPA will continue to encourage and celebrate good practice in biodiversity by members throughout 2015 and into the future."

Follow MPA's 'Biodiversity Exchange' Twitter https://twitter.com/quarry_nature which shares news of members' biodiversity work, as well as more general biodiversity information: @quarry_nature.

MPA Member Case studies

Protecting the Endangered Turtle Dove

Company: CEMEX UK

Site: Various quarries

Date: 2014 – ongoing

Image: Andy Hay



CEMEX UK and the Royal Society for the Protection of Birds (RSPB) have begun a three year conservation project to reverse the fortunes of the endangered Turtle Dove.

At four CEMEX quarries a special flower mix has been sown to provide the Turtle Dove's ideal food and this has been complemented by ensuring there is suitable nesting habitat.

Turtle doves are declining at an alarming rate and we have lost a staggering 95% of the UK's turtle dove population since 1970. This species is our only migratory dove, they breed in England and then undertake a 3000 mile journey to spend the winter in West Africa.



Turtle Dove © Andy Hay

Unlike other UK dove species, turtle doves rely upon seeds for food. Changes in farming practices have led to field margins and hedges, once rich with seed-bearing plants, being replaced by commercial crops, offering very few of the small seeds that they need. The small seeds are required to feed their nestlings.

CEMEX quarries in Norfolk, Hertfordshire, Warwickshire and Lincolnshire offer the suitable habitat with dense scrub and water and the sowing of the special flower mix, the ideal food.

The CEMEX and RSPB project forms part of the partnership Operation Turtle Dove and will link with similar projects that BirdLife International is co-ordinating along the migration path across France and Spain. Operation Turtle Dove is a partnership between the RSPB, Conservation Grade, Pensthorpe Conservation Trust, and Natural England.

Creating New Channel for Flood Prevention & Biodiversity

Company: Hanson UK

Site: Farnham Quarry

Date: autumn 2013 – spring 2014

A project carried out at Hanson's worked-out Farnham quarry in Surrey has created a new 300 metre meandering channel for the River Blackwater, which runs through the site. The new channel, which was cut to the south of the river's previous artificially straight alignment, will help reduce the potential for flooding and enhance biodiversity by improving the river's value for fish and other wildlife.



Creating a new channel - courtesy of Hanson UK

The Blackwater River Restoration Project was led by the Environment Agency (EA) and has involved several years of detailed planning and consultation involving the EA, Hanson, Surrey County Council, Scottish and Southern and local conservation groups including the Blackwater Valley Countryside Partnership.

Access for local residents will be maintained via crossing points leading to the new river channel and the restored quarry area. When the quarry restoration is completed, permissive footpaths will be opened to provide walks around the wetland complex, which is already becoming a valuable local nature resource.



The finished channel - courtesy of Hanson UK

Creation of White Clawed Crayfish 'Ark Sites'

Company: Lafarge Tarmac

Site: Threshfield Quarry

Date: 2014-ongoing

Restoration of Threshfield Quarry in the Yorkshire Dales National Park involved the creation of pools for white clawed crayfish ('Ark Sites') through blasting and excavation of part of the former quarry floor. Lafarge Tarmac worked with Leeds University on a research project to relocate a population of white clawed crayfish vulnerable to predation by the North American Signal Crayfish and Crayfish Plague and to monitor/research the population post-movement.



Lafarge Tarmac are now working with the Environment Agency, Yorkshire Wildlife Trust and a consultant ecologist to re-locate a further threatened population from a nearby water course into the Ark Site. In addition to the re-location, habitat improvements are being undertaken, including the planting of shrubs to provide shading over parts of the pools and introduction of leaf litter to offer enhanced aquatic habitat for the white clawed crayfish.

Hillary Arrowsmith, Communications Manager, Mineral Products Association

Managing farmland for pollinators

A new factsheet is now available which sets out simple steps that farmers can take to help halt the decline in bees and pollinators. Bees and other insect pollinators play an essential role in our food production and in the balance of our environment. They include honeybees as well as many types of bumblebees, solitary bees, hoverflies, wasps, flies, butterflies, beetles and moths. Their numbers have been in decline due to a wide range of pressures such as intensification of land-use, habitat loss and fragmentation, parasites, predators and diseases, invasive alien species, use of pesticides and climate change.

The guidance includes advice on how to help reduce these pressures.

Improving conditions for pollinators throughout agricultural land is a key area for action, by providing more flowering plant species, and larger and better connected habitats by:

- ◆ Improving the habitat connectivity in the landscape.
- ◆ Providing different types of habitat & places to nest and breed, forage for food and hibernation.
- ◆ Ways of cutting and grazing of fields and hedges, and provide good plants for pollen and nectar as well as larval food plants.



Bombus sylvarum © Michael J Clarke.

Farming has a vital role in helping nature. The factsheet has been produced by the Pollinators Taskforce in Wales, in conjunction with Menter a Busnes (Farming Connect's Business Support) and it sets out some of the actions that could help. It provides a wealth of easy to follow information from simple steps that can help to encourage wild pollinators, through to getting involved in beekeeping.

To get a copy go to the following website:

<http://farmingconnect.menterabusnes.co.uk/farmingconnect/factsheets>

Alternatively a hard copy can be obtained by emailing farmingconnect@menterabusnes.co.uk or phoning 01970 636565

To find out more about the Pollinators Taskforce in Wales please go to: www.biodiversitywales.org.uk/Wales-Action-Plan-for-Pollinators

Also please head to the Bees' Needs site for 'information sheets', which are detailed web-based advice for land managers on how to best implement the Bees' Needs advice on their land types. Current information sheets published on the site are: Gardens, Agriculture, Transport Corridors, Woodlands, and Industrial and Post-Industrial spaces.

<http://www.wildlifetrusts.org/Bees-needs>

Gemma Light
Biodiversity Policy Officer
Welsh Government



National Plant Monitoring Scheme

EVERY FLOWER COUNTS – VOLUNTEERS NEEDED FOR ANNUAL STOCK TAKE OF UK'S WILDFLOWERS

Making plants a priority

The new National Plant Monitoring Scheme (NPMS), launching in spring 2015, will for the first time enable scientists to take an annual stock take of the UK's wild plants and their habitats, but to do this we need the public's help. We are looking for volunteers to carry out surveys of wildflowers and their habitats that will provide robust evidence of which widespread plants are increasing or declining, as well as indicating the changing state of our most valued habitats such as grassland, fenland and even road verges. Plants are nature's building blocks and this new monitoring scheme will sit alongside existing schemes for the UK's birds and butterflies to help us understand more about how the countryside is changing.

Chris Cheffings, from the Joint Nature Conservation Committee says "Currently, information on plant species' abundance and change is very limited, and it is difficult to gauge the condition of habitats outside protected sites. JNCC is delighted to be able to support the NPMS, which will fill this significant gap in UK biodiversity surveillance. The annual results collected by volunteers will help to identify trends in hundreds of species, allowing us to assess plant community changes."

The search is now on to find 2000 volunteers to take part in the NPMS who will play a vital role in gathering information. Together the volunteers will monitor wild plants in 28 important habitats, ranging from hedgerows and meadows to salt marsh and scree slopes.

Hayley New, from Plantlife says "The NPMS is hugely enjoyable and over 400 volunteers have helped us set up the new scheme. It's easy to do and everyone will receive free training and guidance plus support from the partnership for volunteers who have queries, as well as web support and illustrated guidance notes – so volunteers will have the perfect survey tool kit to get them started!"

Dr Kevin Walker, Head of Science, Botanical Society of Britain and Ireland (BSBI) says:

"It's really great to finally have a national scheme that everyone can take part in. Whether you simply love wildflowers or are a budding botanist, input from volunteers will provide sound evidence on how our wild plants and habitats are changing. It's a fantastic achievement and should mean that wild plants are at the forefront of discussions on how our environment is changing and what we should be doing about it."

How does the NPMS work?

- ◆ Volunteers will be able to choose from three options depending on their level of expertise: recording from a short or an extended list of target species in each habitat or recording all species they find in their plots.
- ◆ Volunteers will be given a 1 km square with a grid showing up to 25 locations. Surveyors will be asked to visit three of those locations and carry out surveys in square plots and then identify two linear features such as hedgerows, rivers and road verges and survey these locations too.
- ◆ The squares have been randomly chosen, but with a focus on squares containing habitats of interest.

Oliver Pescott, from the Centre for Ecology & Hydrology says "The results from this new scheme should allow us to quantify the smaller changes that are occurring within our most valuable habitats. In the past, volunteer-collected data have been able to demonstrate the results of large-scale habitat loss over the last century, now we would like to reveal even more detail about the changes within the remaining areas of these habitats in our landscape."

For more information on the NPMS and how to take part please visit www.npms.org.uk





Improving our nation's traditional orchards

Traditional orchards are a much loved part of our landscape, not only for their historic, cultural and culinary importance but also for their wildlife value. People's Trust for Endangered Species has launched a new venture to conserve them, thanks to the support of Esmée Fairbairn Foundation, The Martin Laing Foundation and Langdale Trust.

Our interest in traditional orchards was borne out of our work to conserve the rare noble chafer beetle which is mainly found in decaying fruit trees. Whilst the noble chafer is a flagship species, 402 other species of saproxylic invertebrates have been recorded in this habitat to date, including 102 Red Data Book or nationally scarce species. One study of Herefordshire's traditional orchards recorded eight of the 19 bird species in the government's 'quality of life farmland bird indicator', and 16 of the 33 woodland species in the equivalent woodland indicator list.



© PTES

However, orchard habitat is becoming increasingly rare due to neglect, agricultural intensification and development. Losses of traditional orchards range in England from 40% (in south Buckinghamshire 1945-1975) to 95% (in Wiltshire since 1945). Since 1950, overall orchard area in England has declined by 63%. Despite their precarious future and obvious benefit to wildlife, it wasn't until 2007 that they were designated as a Priority Habitat.



This new mission is a natural progression from our previous work which produced the first habitat inventory for traditional orchards in England and Wales, published in 2012. Until then no one knew how many traditional orchards were left or what condition they were in, making it impossible to conserve them. Condition assessments were carried out by hundreds of volunteers on around 20% of the 43,000 mapped orchards and sadly, almost half the orchards in England and over a third in Wales were found to be in a poor condition. In contrast less than 10% of orchards were rated as excellent in each country.

© PTES

Our new project aims to use this information to improve the condition of our nation's traditional orchards. We will support and work with orchard owners to better manage their land for biodiversity. Alongside this, we will establish an online Orchard Owners' Information Centre - a virtual one stop shop for owners of traditionally managed orchards, offering advice, training and a discussion forum.

We have also identified a need to access local heritage fruit varieties when replanting an orchard. Currently the only documented place to obtain these local varieties is at the Brogdale National Fruit Collection, Kent. This living collection is intended to protect and safeguard the UK's fruit genetic resources in the interests of heritage, and for future genetic resilience and breeding. However, the collections are incomplete and often represent the only known record of the variety leaving them vulnerable to natural disaster or disease.



© PTES

We will reduce the vulnerability of this static collection by using our database which holds information on the varieties to create a new virtual fruit collection. We will map all known locations of local and heritage varieties and share this information online. The virtual collection will also identify areas where heritage varieties are absent and which varieties are not locally represented. We will work with private owners and organisations, in particular The National Trust, to increase the distribution of rare varieties by assisting them to plant local cultivars in their orchards.

Improving access to rare varieties will help maintain an interest in traditional orchards, preserve local heritage and create demand for local produce. By raising public awareness of the importance of traditional orchards coupled with offering support, advice and training to orchard owners we hope to secure a future for this important habitat and the threatened species within.



Bat conservation at Highgate - Another record breaking year!

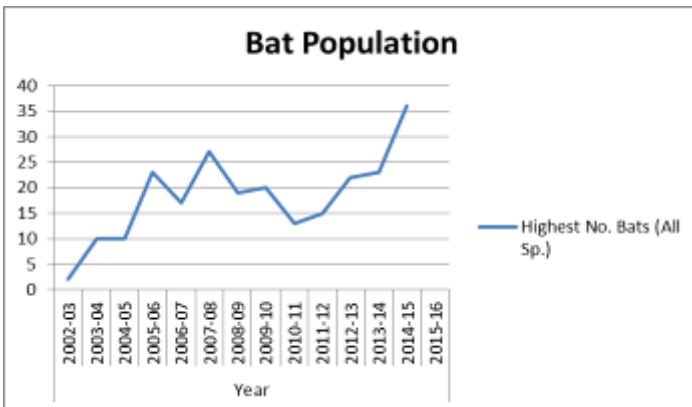


Huma checking tunnels © Hugh Warwick

The history

The steam trains that once used to chuff down the tunnels and tracks at Highgate mainline, ceased carrying passengers in the 1950's. The London Underground (LU) station at the same site began operation in 1941 and LU continues to maintain the above ground disused station and tunnels, for operational reasons, to this day.

In 1997, an ecologist hired by LU, found a single Natterer's and a single Brown Long Eared bat in the two 200 metre long northern tunnels set, so these tunnels were given protective status. Further monitoring and a mist netting survey in October 1999, recorded up to 30 bat passes, and the capture and release of 6 Natterer's and 1 Brown Long Eared bats.



A report recommending modifications to enhance the tunnels for roosting bats. This led to the installation of 46 bat bricks and 12 Schwegler Type 27 bat boxes into the walls, the opening up to the adjoining tunnel, and the construction of a hanging wall at the northerly end of the tunnels.

Since that time, volunteers from the London Bat Group, have been recording 2 to 3 times per year every winter, with occasional summer visits and temperature and humidity monitoring. This successful conservation project has since seen winter roosting bat increase ten-fold since the project began.

However, the work has not ended there!

The future!

A unique project with LU, Haringey Council and the London Bat Group to create hibernation roosts for bats at the southern disused tunnels set at Highgate has begun.

The project to convert the southern tunnels - jointly owned by the council and LU - for bat conservation, was funded by a grant awarded from the SITA Trust's Enriching Nature Programme, with additional funding provided by the London Bat Group and LU.

Ian Holt, Haringey Council's Nature Conservation Officer, explains: "The tunnel designs were completed by LU and the on site works finished in Nov 2013. These involved securing the end of the tunnels with horizontal metal grilles, gates and brick walls to control airflow and create an enhanced environment for hibernating bats.

"The external bricks selected had to match existing brick size and colour due to the tunnels being locally listed structures. As well as the new brick walls at the end of each tunnel, three hanging walls were constructed internally, with one tunnel having two. This creates a wider diversity in environmental conditions, allowing us to make comparisons between the merits of each design.



Natterer's in south tunnel © Charlotte Brennan



3 Natterer's © Hugh Warwick



The effects are being monitored with temperature and humidity data loggers and will hopefully help inform future bat conservation projects both at Highgate and elsewhere.

Inside the tunnel "bat bricks" have been installed, along with innovative bespoke freestanding habitat frames to hold bat boxes within the tunnels. A total of 18 metal frames each housing three large sheets of marine ply - providing six sides for hanging artificial roosting structures - were positioned down the centre of the tunnels in varying configurations. This provides further environmental variation by, for example, creating small pockets of reduced airflow. The frames also reduce the number of bat boxes that needed to be hung on the tunnel walls, helping to protect the structures brickwork.



Bats in bricks © Lindsay Stronge

Environment Manager Suzie Jackman says "TfL and LU have objectives to protect and enhance the natural environment. This project is an excellent example of partnership working where the end results not only provides benefit for a significant species in decline but also provides additional benefits to LU, such as improved security and better relationships with key stakeholders.

Cindy Blaney from the London Bat Group says "Bat species occupy a unique and valuable niche habitat. They are a protected species, but their numbers are declining across the UK. Although their ability to fly means they can change location frequently, they really rely on us preserving the unique character of the places where they can gather and roost for long periods."



Tunnel 1 © Hugh Warwick

The Highgate disused tunnels are now a regionally and nationally significant site for bats and this year has once again set a record – 36 bats were found, including 6 in the newly converted southern tunnels set. It is hoped that the numbers in the southern tunnels continue to rise to match the northern tunnels, and that the shared learning from the southern tunnels project will bring benefits across the UK.

Suzie Jackman MIEMA CEnv
Environment Manager
Transport for London

Heavy metal and rock

Meadows and other grasslands are an intrinsic part of the UK's natural and cultural heritage: rich in landscape character, farming, folklore and history, they are as much a part of our heritage as the works of Shakespeare. It's no wonder wildflower meadow planting is enjoying a huge vogue in gardening; they look beautiful and attract wildlife, particularly threatened pollinators. But real wildflower meadows are vanishing – and with them native flowers such as green-winged orchid, oxlip, dyer's greenweed, and meadow saffron. There were once natural wild flower meadows in every parish – today only 2% of the meadows that existed in the 1930's remain. Nearly 7.5 million acres of wildflower meadow have been lost so far and they are still being destroyed.

The Save our Magnificent Meadows project is protecting, conserving and restoring wildflower meadows and other grasslands across the UK, and is focusing on the Fermanagh grasslands of Northern Ireland, the pastures of west Wales, Scottish grasslands from Edinburgh to Aberdeenshire, the calaminarian and whin grasslands of Northumberland and traditional meadows and pastures in southern England.

In June we began this exciting new project here in Northumberland where we're looking at restoring some of our most scarce grassland communities. Save our Magnificent Meadows is the largest UK partnership project that the Heritage



Bee orchid



Lottery Fund has ever awarded money to and as such something we're rather pleased to be involved with. The Save our Magnificent Meadows team is headed-up by Plantlife with 9 other organisations, including Wildlife Trusts, local councils and the RSPB carrying out the work on the ground.

So, you might ask, what are we doing here in Northumberland? We are concentrating on two scarce and unusual grassland communities; whin and calaminarian grasslands. Whin grasslands are pretty much unique to Northumberland. These grasslands have established on very shallow, well-drained soil formed on the hard rock of the whin outcrop. Because the whin rock, when it formed, forced its way through layers of sandstone, limestone and shale the resultant soils have a very varied chemistry and as such unusual species assemblages with rare plants. Species such as hairy stonecrop, wild chive, long-stalked cranesbill and Northumberland's very own lady's mantle *Alchemilla micans* can be found in the community. The calaminarian grasslands are similar to the whin in that they have formed over shallow, well drained soils, but what makes these special is the high levels of heavy metals such as lead, zinc and cadmium. Where these toxins would ordinarily kill-off most species of plant, some unusual, and again rare, species colonise. These include mountain pansy, alpine pennycress, spring sandwort and thrift. Although not strictly speaking meadows, being grasslands they have suffered similar fates; lack of grazing, scrub encroachment, nutrient enrichment and colonisation by invasive non-native species. All these factors result in the loss of many of the rare and unusual species supported by these grasslands and as such it is here that we are concentrating our conservation efforts.



Mountain pansy © duncan hutt nwt

In the four calaminarian grasslands and five whin grassland sites that we are working on we have been beavering away removing scrub, bashing balsam, removing bracken, and stripping back deep soil. The reasons behind removing scrub and invasive non-native species are self-explanatory but soil stripping may seem a bit more unusual. Both whin and calaminarian grasslands support species that thrive on shallow nutrient poor soils, but easily get out competed by more common grassland species as soils form and get deeper. To redress this we are stripping back deep soils to create the ideal habitat for both grassland communities. Over the next three years we will be keeping going with our practical work and surveying closely to ensure we're on the right track.



Dave inspects a moth at invertebrate survey day at Williamston © Naomi Waite nwt

Throughout the project we'll be running various events and training sessions so keep an eye out on the NWT website for these, but we're also after volunteers – are you an expert botanical illustrator? keen on bashing some balsam? A super baker who'd like to bake a cake for an event? Wild flower seed collector or grower? If so, or you'd like to find out more opportunities to volunteer with the project, email naomi.waite@northwt.org.uk.

Most of the Save our Magnificent Meadow sites are in private ownership but if you'd like to visit some of the grasslands we are working on NWT reserves Williamston and Beltingham shingles have examples of calaminarian grassland, with the Northumberland National Park Walltown Quarry has some good examples of whin grassland.

Naomi Waite MSc MCMA
Conservation Officer





Dukes Saved From Hazard In Sussex

A project lead by wildlife charity *Butterfly Conservation* has seen the UK's most rapidly declining butterfly brought back from the brink of extinction in Sussex.

The Duke of Burgundy was only seen in the county eight times during 2003. Last summer, volunteers for Butterfly Conservation's Sussex Branch counted as many as 100 a day at the Murray Downland Trust's Heyshott reserve near Midhurst.

Yearly counts of the species are now averaging around 1000 and new colonies are also being established.

The Duke of Burgundy is arguably the UK's most charismatic butterfly. Although it measures less than three centimetres across, it is fiercely territorial and highly argumentative, attacking any flying insect that crosses its airspace. The Duke's upper wings are orange and brown, overlain with a network of dark bars and stripes, while its underwing is a mix of burnt orange and pale ochre with distinctive flashes of white.

The butterfly can be seen on the wing anytime from the end of April right up until the end of June and can be found on scrubby chalk grassland or in sunny woodland clearings. However, due to changes in woodland management it is now listed as a threatened species.

For the last ten years, volunteers from Butterfly Conservation's Sussex Branch have been working hard to save this small but feisty butterfly from local extinction. Working alongside the South Downs National Park Authority and many landowners, including the Norfolk, West Dean and Wiston Estates, they have been clearing scrub, improving and creating suitable habitats.

In 2011 a Butterfly Conservation project, headed by Senior Regional Officer Dr. Dan Hoare and named 'Dukes on the Edge', received funding from SITA Trust and the Heritage Lottery Fund to extend and expand conservation work to benefit this species across the border into Hampshire and further across south east England.

Dr Hoare said: "The butterfly is thriving on both sides of the border now, with populations increasing on the sites we've managed and new colonies springing up nearby".

Neil Hulme, Conservation Adviser for the Sussex Branch, said: "It has been immensely satisfying to see this beautiful species doing so well in Sussex and very exciting to see it reclaim lost ground, although much remains to be done.

"It is only by working in partnership with other organisations and through the kind co-operation of landowners that this has been possible. Special mention must also be made of the volunteers, who turn out in all weathers to improve the habitat for the Duke. It is through their contribution in particular that we can now hope to see this iconic species of the South Downs flying long into the future".

Katie Callaghan
Media Officer



Duke of Burgundy larva_photo © Peter Eeles



Volunteers



Duke of Burgundy - photo © Iain Leach



Duke of Burgundy 2 - photo © Peter Eeles



Catchment Restoration Funded project at Little Waltham meadows, nr Chelmsford, Essex.

Since 2012, the Essex Biodiversity project and the Essex Wildlife Trust have been involved in an ambitious multi strand project aimed at improving the condition of rivers in North Western Essex. Funded by the Environment agencies, Catchment Restoration Funded this project aimed to deliver a number of habitat interventions along the River Pant and the River Chelmer, promote awareness amongst landowners and the general public.

After many years of planning the first of the habitats programmes have now been completed, in this case at Little Waltham, a nature reserve just north of Chelmsford. The most significant features of this reserve are the relatively poor floristic meadows and conversely an important piece of W6 woodland to the north of the site. There was also a large degree of disconnection from the river with the flood meadows only infrequently flooding, this is largely a function of the historical management with it being straightened and over deepened. In addition the River Chelmer is currently failing its WFD targets particularly for phosphate and Morphology.



Figure 1: New Control Structure at Little Waltham Meadows © Kieren Alexander

We devised a plan to enhance the wetland habitat and offer significant gains to the overall condition of the river. This involved creating a back channel with settling ponds with connections to both the River Chelmer and an existing land drain, rehabilitating existing wet woodland and by removing some of the diffuse pollution inputs into the River, improving the overall condition of the catchment.

To do this we installed two control sluices, set to specific levels which allowed water to enter the back channel and store water to allow the further wetting up of the woodland. Excavated a 280 metre back channel with three settling ponds diverted one existing drain, and moved 3000 cubic metres of spoil which was re-spread and reseeded on a nearby floristically uninteresting field, re-profiled 200 metres of riverbank and installed a couple of pieces of woody debris.

The benefits of this project are manifold. By diverting an existing land drain through the settling ponds and the new back channel many pollutants such as nitrates will be filtered by reed and other vegetation, it will also reduce silt inputs which can carry additional heavy pollutants such as oil and other road run off.

The back channel and bay will also offer additional habitat for fish, especially fish fry in times of high flow. All the above have resulted in an increasingly connected floodplain and river which has resulted in minor flood risk benefits by increasing the storage capacity in the floodplain. The increased wetting will also in time improve the habitat quality of this field by promoting the growth of emergent and aquatic flora and habitat.

The enhanced wet woodland will offer better habitat for specialist plants and insects, helping to conserve and enhance what is an increasingly rare habitat along the River Chelmer. Woody debris has been identified as a key element in the future habitat improvement of rivers, it is an excellent way of creating niches for a wide variety of invertebrates including cased caddis flies, improves flow diversity promoting bed scour and bank erosion. It also improves water quality via a process of denitrification which helps to remove nitrates in the water column. Over time silt will deposit behind and in front of the debris which will allow marginal vegetation to develop helping to improve water quality and providing further habitat niches.



Figure 2: meadows before the creation of the back channel © Kieren Alexander



Figure 2 is a picture of the meadows before and figure 3 shows after the creation of the back channel.

It is far too early to start making judgements on how successful it will be, especially in improving the water quality of the River Chelmer but early indications are encouraging with sightings of grey wagtail and kingfishers in the weeks after completion of works. The project is now largely complete, however, in the coming months we have aspirations to install mains fed water for the cattle that graze the site, plant some rare black poplars and to put a new fence around the wet woodland to protect the valuable biodiversity features found here.



Figure 3: Meadows after the creation of the back channel © Kieren Alexander

Kieren Alexander

Biodiversity Project Officer

Essex Wildlife Trust

Kierena@essexwt.org.uk

Wetland treatment system providing benefits to local wildlife populations

Last week WWT Consulting staff visited the B&W Equine Clinic in Gloucestershire, to carry out some maintenance to the wetland treatment system which we designed back in 2010.

The system was designed to deal with wastewater, including domestic sewage, as well as a range of clinical disinfectants used in horse surgery. A wetland treatment system was particularly suitable for the situation at the equine clinic, as mains sewer connection was prohibitively expensive, and a package treatment plant was discounted due to the risks of sterilisation of the bacterial communities required for this treatment process.

The wastewater runs through a series of beds, which gradually improve its quality. It first is treated by a rafted settlement tank, which allows cleaning compounds to degrade, provides a buffering effect against sterilisation of the wetland bacterial population from disinfectants and also removes solids. Wastewater then passes through a series of vertical flow, horizontal sub-surface and final polishing wetlands to remove pollutants. The system then flows to a wildlife pond before safe discharge to the environment. This final pond is designed to attenuate stormwater generated by the site and to provide additional wildlife habitat.

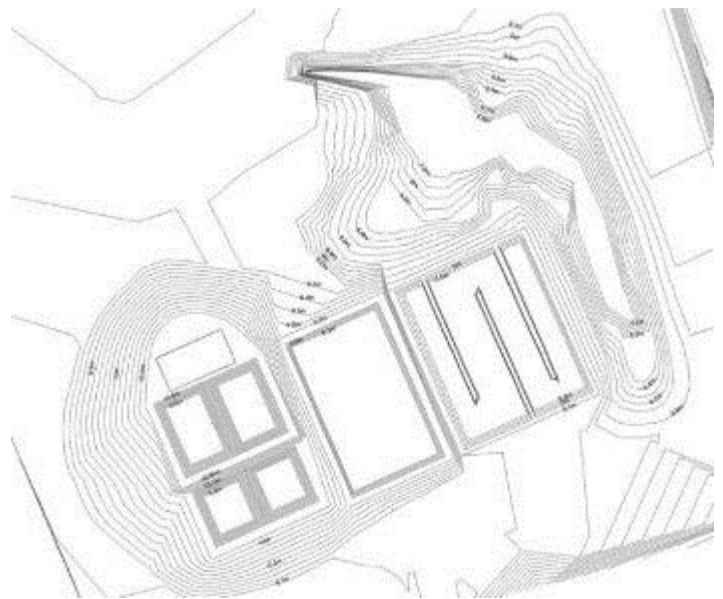


Fig 1: Layout of the wetland treatment system © WWT/James Darke

When the site was constructed in 2010, all of these beds and the pond were planted with wetland species. The commonest plant in the treatment beds is Common Reed *Phragmites australis*, which is now fully established and requires a cut, with removal of cuttings in the winter. This management allows the removal of the biomass created over the growing season. Raking over the bed and removing the leaf litter not



Fig 2 Newly planted polishing wetland © WWT/James Darke



Fig 3 Matured treatment beds © WWT/James Darke



Fig 4 Treatment beds, wildlife pond and surrounding habitat © WWT/James Darke

only removes more biomass and nutrients from the system, but stops the gravels in the bed from becoming clogged.

The treatment system is located next to a mature hedge with large Pedunculate Oak *Quercus robur* trees, so the Common Reed stand adds an extra element of biodiversity and a different habitat to the area, which gets used by local bird species. Birds such as Reed Bunting *Emberiza schoeniclus* (a bird with amber conservation status) and Long-tailed Tit *Aegithalos caudatus* have been seen using the reeds, along with commoner species such as Blackbird *Turdus merula* and Blue Tit *Cyanistes caeruleus*.

During our visit, Bank Vole *Myodes glareolus* and Water Shrew *Nemomys fodiens* were also seen using the constructed wetland.

After four years, the wildlife pond has also established nicely, it was planted with a more diverse range of species than the treatment beds, and stands of aquatic plants including Reedmace *Typha latifolia*, Yellow Flag *Iris pseudacorus*, Water Mint *Mentha aquatica*, and Brooklime *Veronica beccabunga* have developed.

At the moment the gently sloping sides to the pond and the range of plant species provides excellent habitat for amphibians such as Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris* and invertebrates such as Common Blue Damselfly *Enallagma cyathigerum*.

Great Crested Newt *Triturus cristatus* have been recorded in the area, and a survey is planned slightly later in the season to see if these European protected species are also using the system. The pond contains many species of plant suitable for egg laying, as well as having areas of deeper water free from vegetation which Great Crested Newts use for displaying.

With the wetland treatment system performing well in improving the quality of the site's wastewater, it is very encouraging to see the added benefits of the system to the local wildlife populations.

<http://www.bwequinevets.co.uk/>
<http://www.wwtconsulting.co.uk/>

James Darke
WWT Consulting



Lessons start at Panshanger Park Forest School



Den-building © Becky Shenton

The first groups of Hertfordshire children to experience the brand new Panshanger Park Forest School have been thoroughly enjoying their outdoor lessons this term.

Panshanger Park Forest School, which is funded by Lafarge Tarmac and delivered in partnership with Herts and Middlesex Wildlife Trust, allows local children the opportunity to experience a whole new way of learning.

Children from Applecroft Primary School, Panshanger Primary School, St Phillip Howard Primary School and St John's Primary School got stuck into creative and educational activities including making natural art with woodland materials, den building, using tools and exploring wildlife.

Becky Shenton, Panshanger Park Forest School Officer, says: "Panshanger Park provides an amazing setting for the Forest School and I'm looking forward to welcoming more children into the school over the coming weeks and months. I'm very pleased to say that the sessions are proving very popular among local schools - we are almost booked up until the end of the academic year already."

The Forest School learning area takes up to 15 primary school children at a time. The children will spend a minimum of 6 sessions learning outdoors, over a number of weeks.

Robert Price, Headteacher at St John's CofE Primary School in Digswell, says: "This is a fantastic opportunity to get the children outside and learning! You can see the excitement on their faces as they look for minibeasts and play Forest School games. The children are gaining so much from this opportunity and we are grateful to Herts and Middlesex Wildlife Trust and Lafarge Tarmac for inviting local children to take part in this exciting project."

Dave McCabe, Regulatory Affairs Manager in Lafarge Tarmac's Sustainability Department, says: "We are offering an excellent opportunity for Hertfordshire's future generations to learn about the importance of our natural environment as well as contributing positively to our local communities."

Tim Hill, Conservation Manager at Herts and Middlesex Wildlife Trust, says: "Panshanger Park has an outstanding variety of wildlife. The new Forest School means we can all share this inspiring environment with local schoolchildren - and if they are inspired to love it, they will want to respect and protect it in the future."

The Panshanger Park Forest School is the first of what Lafarge Tarmac hopes will become a national network of Forest Schools, delivered as part of the company's sustainability strategy.

Follow Panshanger Park Forest School on Twitter: [@fspanshanger](https://twitter.com/fspanshanger)

Becky Shenton
Panshanger Park Forest
School Officer



Nature Park launched in Poole for wildlife and people

An exciting new partnership has enabled the creation of the Holes Bay Nature Park in Dorset, reaching from the heart of Poole right around the bay to Hamworthy.



Alitta virens King Ragworm © A SEMONOV

The Nature Park includes shoreline, woods, salt marsh and intertidal mudflats of Poole Harbour. The largest natural harbour in Britain, this is an internationally important protected area for wildlife, with up to 20,000 wildfowl and wading birds in winter. There is also a dazzling variety of hidden wildlife here, from at least 12 species of fish swimming the shallow waters to over 80 species of worms, crustaceans, molluscs and insect larvae in the incredibly rich mud. The area north of the railway line is additionally designated a bird sensitive area, due to its use by internationally significant numbers of birds.

Holes Bay is an urban site, lying beside the main A350 road and with a well-used cycle and footpath. Here people have the chance to get as close to rare and beautiful nature as it gets and to discover other beautiful sites via linking trails. The Bay is a hub for 'green' access including The Poole Harbour Trail, National Cycleway 25, local public rights of way, Poole Heritage Cycle Trail and the Castleman Trailway to Broadstone and beyond.



Spoonbill Holes Bay Feb 2015 © I JULIAN

The Nature Park, created by Dorset Wildlife Trust, Borough of Poole and Poole Harbour Commissioners, is bringing together landowners, local communities and local businesses to enjoy and help to look after this very special place. It will bring people closer to nature and ensure the habitat is managed for the benefit of the huge variety of wildlife in the area. The Nature Park will consist of nature reserves, specialist bird sensitive areas and newly designated shellfish refuges to help protect wildlife. It also includes footpaths, cycle tracks, Upton Country Park, marinas and boat moorings, which means that local communities and visitors can also enjoy the natural environment.



Bass, © Paul Naylor

Over-wintering birds in Holes Bay include avocet, black-tailed godwit, red-shank, shelduck and wigeon. Close views and sounds of wildfowl and wading birds, from the evocative calls of wigeon to the impressive sight of feeding spoonbill, give many people their first experience of spectacular wildlife. New interpretation, developed by The Great Heath project with the help of Natural England, the Birds of Poole Harbour charity and local experts, aims to encourage enjoyment and understanding of the habitat and its wildlife. A particular focus has been the importance of the wide range of invertebrates in the mud and waters of Poole Harbour and the promotion of a recently agreed Memorandum of Agreement to regulate bait digging, a popular activity at this site.

The Holes Bay Nature Park has been made possible by The Great Heath Living Landscape project, led by Dorset Wildlife Trust and funded by the Heritage Lottery Fund. The Great Heath is a partnership of voluntary organisations, local authorities, businesses and communities working together to create a living landscape in which both people and wildlife can prosper.

To find out more about the Holes Bay Nature Park and The Great Heath, visit thegreatheath.org.



Holes Bay wading birds © P MORTON The Sound Approach

Nicky Hoar, The Great Heath Learning and Interpretation Officer, Dorset Wildlife Trust



Ancient Peatlands to grow again

Farmers and grouse moor owners are teaming up with conservationists to restore vast expanses of Peak District and South Pennines peatlands, home to extensive tracts of semi-natural moorland with upland heath and peat bog, birds of prey and wading birds.

The peat bogs have been in decline since the industrial revolution, but thanks to individual moorland business owners, 30 large Environmental Stewardship (ES) agreements are now underway to bring about £15 million of moorland restoration measures over the coming 3-5 years. Funding from the scheme will be of great importance in bringing upland Sites of Special Scientific Interest (SSSIs) into better condition.

The ES scheme, which is administered by Natural England on behalf of Defra will also allow for changes to management on 39,000 hectares of moorland, such as less heather burning and a return to traditional shepherding to help improve the moorland environment. Running through to 2024, the agreements will bring great benefits to water quality, wildlife, recreation and business through these restoration measures.



© Moors for the Future Partnership

How it works:

Restoration management such as gully blocking, heather brush spreading and re-introduction of a wonderful moss called 'Sphagnum' will provide the following benefits:

- ◆ increased water retention on the SSSIs to sustain peat bogs and their special plant life and birds
- ◆ good conditions for grazing animals and grouse
- ◆ reduced peat erosion into reservoirs
- ◆ improved paths for recreation and reduction in disturbance to wildlife habitats
- ◆ slower run-off into rivers after downpours, reducing flood-risks
- ◆ more carbon retention in peat, which helps mitigate climate change

Agreement holders can choose to organise the work themselves or collaborate with a specialist moorland conservation organisation such as the not-for-profit Moors for the Future Partnership.

Natural England's Chairman Andrew Sells said "The end-result will be amazing - the peatlands will become active again providing long-lasting prosperity for the environment and businesses. There will be improvements for people and wildlife, cleaner water for surrounding cities, reduced flood risk, better public recreation and increased global carbon storage. What a fantastic way to work with rural businesses to undertake necessary regeneration and to harness benefits from the moorlands, whilst also enhancing the rural economy."



© Moors for the Future Partnership

The scheme is also supported by the Moorland Association, which represents many owners. Peak District representative Simon Gurney welcomed the ambitious large-scale restoration plans, explaining the extensive experience and knowledge of land managers would be invaluable to the project's long-term goals and success.

He added: "By working collaboratively, changes and improvements can take place while safeguarding the land use which is essential to the economy of our internationally recognised moors."



More about the Private Lands Project

Many new agreement holders are joining Moors for the Future's Private Lands Project to deliver restoration. With over 11 years' experience, the Moors for the Future Partnership has already made significant progress on restoration projects and can assist landowners with practical work, expertise, cash-flow and indemnification.

As more individuals join the project, a patchwork of special sites across neighbouring areas of private land come together to create large 'landscape scale' improvement for people and wildlife.

Matt Scott-Campbell, the Private Lands Project Manager said: "Moors for the Future is pleased to be working with five private land managers across the Dark Peak at Saddleworth, Crowden, Moscar, Peaknaze and Stalybridge".



© Moors for the Future Partnership

"We look forward to more opportunities to work with private businesses to help achieve conservation on their land and to contribute to the landscape scale effort funded by Environmental Stewardship"

Emma Downes
Moors for the Future



Discover the UK's Treasure Islands

When people think about the UK's biodiversity most will probably have in mind images of foxes, badgers, flower rich meadows or perhaps woodland birds. Not many will consider the animals and plants to be found on the UK's diverse range of Overseas Territories from the Falkland Islands in the South Atlantic to Anguilla in the Caribbean. Yet, according to a recent stocktake of nature undertaken by the RSPB and funded by the FCO, our 14 Overseas Territories contain 94% of unique British species. Some of these species populations are globally significant.

For the last three years, naturalist and wildlife-filmmaker Stewart McPherson has been undertaking a self-funded project that aims to raise awareness of the biodiversity of the UK Overseas Territories. With a team of cameramen and photographers, he has visited all of the Territories to work with the local conservation teams of each UKOT to document the incredible biodiversity of each Territory, and the inspiring conservation work being undertaken.

From exploring the world's biggest penguin colonies, pristine coral reefs, rainforests, deserts and glaciers, his project, titled *Britain's Treasure Islands*, aims to showcase the true treasure of the Territories - not gold nor silver, but the incredible wildlife, amazing history and cultural heritage of these far-flung outposts of Britain.

Stewart and team have captured over 250 hours of high definition footage, and 55,000 images, and are currently working with conservationists across the Territories to edit together a 4 part documentary series aimed for broadcast in the UK and internationally, a 600-page natural history book, and to complete 27 mini-documentaries for online release that will provide a permanent resource for all. The mini-documentaries are a resource which he intends to give to all governments, conservation organisations, schools and universities across the UK and the Territories free of charge. You might want to make a note of the website, currently under construction, where you will be able to view the mini-documentaries www.BritainsTreasureIslands.com.



Coral diversity - Ascension



Mountain chicken Montserrat © Gerardo Garcia

So, what is the UK Government doing to help conserve these priceless national treasures? Our role is to work in partnership with the Territory Governments to provide them with the technical advice and support they need. The Overseas Territories Biodiversity Strategy is a key tool with which to ensure that the rich environmental assets of the Overseas Territories are cherished. Since its inception a number of activities have been initiated across Government by Defra, FCO JNCC and others. An annual update on Government activity can be found on the GOV.UK website.

The Darwin Plus funding stream under the UK's Darwin Initiative is devoted entirely to environmental projects in the UKOTs with funding provided by Defra, FCO and DFID. The latest projects to receive funding were announced by Lord de Mauley in December and ranged from habitat restoration on South Georgia to sustainable management of threatened predators to enhance reef resilience in the Cayman Islands.

If you are involved in any work associated with the UK's Overseas Territories and are not currently engaged with the UKOT Biodiversity Group chaired by Defra, please contact [Claire Hamilton](#) – we would love to hear from you.

Mark Baxter, Claire Hamilton and Stacey Hughes
CITES & International Species Protection, Defra



South Georgia Pipit Chicks

An 18-strong international team has recently departed for the remote British Overseas Territory of South Georgia to begin the final phase of the world's largest rodent eradication project undertaken by UK charity, the South Georgia Heritage Trust. Known collectively as 'Team Rat', the team's departure for South Georgia on Sunday 18 January has coincided with news of the discovery of a nest of five South Georgia Pipit chicks in an area overrun with rats before being baited by the Trust in 2013. The South Georgia Pipit is the world's most southerly songbird, only found on South Georgia. Its numbers had been decimated by the invasive rat populations on the island and its survival as a species was under threat before the eradication work began.



© Sally Poncet

The discovery of the pipit nest was made at Schlieper Bay near the western end of the island. It was found by a former member of 'Team Rat', Sally Poncet, an expert on South Georgia's wildlife and this year a recipient of the Polar Medal in recognition of service to the United Kingdom in the field of polar research. Poncet was a member of Team Rat during its Phase 1 operations. She discovered the nest while on a Cheesemans' Ecology Safaris expedition (in collaboration with the Government of South Georgia) to survey Wandering Albatrosses.

Alison Neil, Chief Executive of South Georgia Heritage Trust says, "The discovery of pipit chicks is thrilling news and shows the rapid beneficial effect of the Habitat Restoration Project on this threatened species. People had spotted pipits exhib-

iting breeding behaviour following the baiting work, but this is the first firm proof that they are nesting in areas from which they were previously excluded by rodents. Pipits cannot breed when rats are present, so this discovery is confirmation that birds are quickly responding to their absence. We are confident that when South Georgia is once again free of rodents, it will regain its former status as home to the greatest concentration of seabirds in the world."

The Trust's ambitious £7.5 million Habitat Restoration Project aims to reverse the ecological destruction wrought by invasive rodents which were inadvertently brought to this wildlife oasis on sealing, whaling and other ships over the past 200 years. More recently, climate change has been causing the retreat of the island's glaciers, allowing the rats to access new areas of the island and gain an ever stronger foothold on South Georgia.

A successful trial phase in 2011, followed by a second phase conducted in 2013, show every sign of having eliminated rats from almost two-thirds of South Georgia. This project is already five times larger than any other rodent eradication attempted worldwide.

On arrival in South Georgia, the team will fly fuel drums and bait from the helideck of the RRS *Ernest Shackleton* to 7 or 8 separate forward operating bases on the south-east coast of the island. Once aerial baiting commences, GPS tracking systems will be used to keep an accurate record of bait coverage. The objective is to spread 95 tonnes of bait by helicopter over an area of 364 square kilometres, including a 227km stretch of sinuous coastline. The three month field operation between January and the end of April will involve some 450 flying hours, using 450 drums of fuel to keep the helicopters in the skies above South Georgia.

The challenge is to complete the baiting of the entire island during the brief sub-Antarctic summer months and this will be followed by two further years of monitoring by the South Georgia Heritage Trust and the South Georgia Government. Assuming no signs of rodents have been discovered by 2017, South Georgia will be declared free of rodents for the first time since humans first came to the island.

The Habitat Restoration Project has been funded by donations raised by SGHT and its US counterpart



Friends of South Georgia Island (FOSGI), which have together so far raised some £6.6 million (\$10.6 million) of the £7.5 million (\$12 million) needed to complete the eradication project.

Financial support has come from UK, US and Norwegian Trusts and Foundations, from individual supporters including thousands of cruise ship passengers and the tour operators they travel with, and through in-kind donations from companies such as Bell Labs (USA) and ARCO (UK) who supply bait and PPE respectively. The project has also received a grant of £250,000 from the UK Government (DEFRA), £253,000 from the Darwin Initiative and most recently in December 2014 just under £250,000 from the Darwin Plus scheme for UK Overseas Territories.

Lyndsey Smith
Account Executive
Firebird Public Relations Ltd

The RSPB in the Caribbean: Climate change, ecosystems services and nature reserves

The UK Overseas Territories of Anguilla and the Cayman Islands comprise some of the most beautiful islands in the Caribbean. The trouble is everyone knows it. Development is proceeding rapidly and natural areas are quickly being lost.

Viv Booth and Olly Watts of the RSPB led a workshop in Grand Cayman in February, towards finding the best ways to manage and plan the progress of protected areas in the islands, and to assess and adapt to climate change. The workshop follows the recent publication of a [report on the ecosystem services](#) of the islands, all part of a Darwin Plus funded project to develop ecosystem services and protected areas in these islands.

Site visits across Grand Cayman and the Sister Islands of Cayman Brac and Little Cayman highlighted both the amazing biodiversity and development pressures. We visited Cayman Brac Parrot Reserve, home to the last remaining Brac parrots, and trekked through treacherous karst forest terrain to see the endemic blue iguana. We were impressed by the birds of the two million year old Mastic Forest, and visited a variety of open water reserves including Booby Pond, home to some 2,500 nesting red-footed boobies, with patrolling magnificent frigate birds. A boat trip emphasised the extent of the 3,500 hectare Central Mangrove Wetlands on Grand Cayman, and the tourist benefit of wildlife at Stingray City, with the amazed excitement from people able to swim with wild stingrays on a shallow sand bar.

We also saw various instances of development pressures. Although the islands' planning mechanisms are slowly being improved, the opportunities to develop tourism and its economic significance highlight the importance of owning land for nature. Few of the sites we visited enjoyed the security of overall ownership or other protection.

We also learned a great deal about the impacts of Hurricane Ivan in 2004, to both human and natural communities. So the workshop was timely, addressing twin pressures of maximizing the potential of nature reserves and considering adaptation to climate change. Accordingly they attracted good participation, with the Cayman Department of Environment, Cayman Water Authority, the Department of Agriculture, University College of the Cayman Islands, St. Matthew's University, and the non-profit Sustainable Cayman joining the co-organisers, the National Trusts of both Anguilla and the Cayman Islands.



Cayman blue iguana meets Anguilla National Trust staff, © Viv Booth/RSPB



The management planning part of the workshop took participants through the process of writing a management plan, from information gathering, evaluating information to determine priorities to deciding on the intention of management and determining the actions needed. Case studies from the RSPB's network of over 200 nature reserves in the UK, and also from where the charity has worked with partners around the world, brought the practical the benefits of systematic management planning vividly to life.



Workshop in progress, © Viv Booth/RSPB

The climate sessions were focused around the RSPB's framework for assessing adaptation. This follows eight simple steps, with a workshop leading participants' discussion through a logic framework approach to assessing both direct and indirect climate impacts, prioritisation and consideration of adaptation objectives and actions. The approach encourages discussion and sharing climate change knowledge, experiences and ideas, towards embedding adaptation as an integral part of conservation programmes.

"The week-long programme was tremendously useful" said Paul Watler, Environment Programmes Manager for the Cayman Trust, "not only for the opportunity to learn from the seasoned staff of the RSPB, but also for the chance to compare notes with our Anguillian counterparts." And both Cayman and Anguillian participants found the workshops to be extremely productive. They worked on management plans for protected areas on the islands that will be useful for years to come. Climate change was also enthusiastically embraced, with impacts identified and the ways forward charted. Perhaps some of the most important activities however were the relationships made and re-established, and all participants found it extremely useful to engage with partners in the community. Just as in the UK, it was clear in these small island communities that together we can achieve so much more than we could as individual organizations.

The RSPB is grateful to the Darwin Plus awards, and to the Anguilla and Cayman Islands National Trusts, for the opportunity to work with and share our experience to strengthen conservation for the biodiversity of these amazing Overseas Territories.

Olly Watts and Viv Booth, RSPB, The Lodge, Sandy, Bedfordshire SG19 2DL

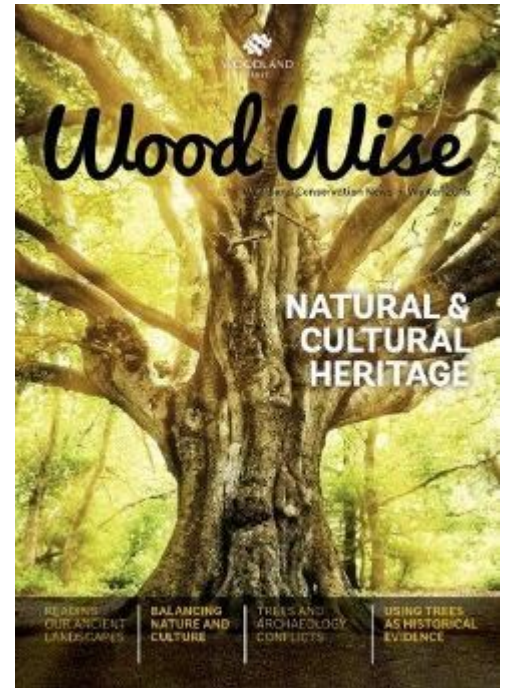


Wood Wise: natural and cultural heritage

Heritage is important as it links us to the past, supports the present and influences the future...

This issue looks at the importance of irreplaceable landscapes, using trees as historical evidence, balancing natural and cultural heritage during restoration projects, and conflicts between trees and archaeology.

To read current and past issues of Wood Wise please just follow this [link](#) .If you would like to subscribe to future Wood Wise issues, please email conservation@woodlandtrust.org.uk





Flora locale Training Programme 2015

The *Flora locale* training programme is created for people involved in the design, management and restoration of wild plants and landscapes for biodiversity, whether on a farm, smallholding, village green or city park. Each event is led by an individual with practical experience and provides an informal opportunity for participants to learn from an expert and each other.

- ◆ For full details and to book click on the event title
- ◆ All events must be booked in advance
- ◆ Fees are £100 p/p per event £75 p/p for employees/volunteers of charities parish councils, students and those not economically active, unless otherwise stated
- ◆ Flora locale Associates benefit from a 10% discount on the booking fee
- ◆ Payment by credit card or invoice is available through the website

[Creating new ponds for wildlife](#)

Wednesday 10 June

Location Farndon, Cheshire

Facilitator: Julia Drage*

[Sowing wild flower seeds to create or enhance habitat for pollinators and other wildlife](#)

Thursday 25 June

Location: King's Lynn, North Norfolk

Facilitator: Emorsgate Seeds

[Urban wildflower meadows - taking opportunities, planning for challenges](#)

Wednesday 24th June 10am – 3.30pm.

Location: Colwyn Bay, Conwy

Facilitator: John Harold, Director, Snowdonia Society*

[Wildflowers and The challenge of making a landmark, for people and wildlife](#)

Fee £40 Concession for Buglife/Butterfly Conservation members £25

Wednesday 15 July

Location : Liverpool, Merseyside

Facilitator: Richard Scott, Landlife*

[Habitat management in new and established woods](#)

Thursday 21 May

Location Chulmleigh, North Devon

Facilitator: Dr Mike Moser, Chair, South West Forestry and Woodlands Advisory Committee to the Forestry Commission

[Woodland flora identification and introduction](#)

Wednesday 24 June

Location: Dollar, Clackmannanshire

Facilitator : Carol Crawford, Peak Ecology Ltd*