

Vincent Wildlife News

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The final pine martens have been released in mid Wales

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Welcome

from the VWT's CEO, Natalie Buttriss



"The plans for a new pine marten survey for 2008/09 began to take shape and we became engaged in a new period of networking with the wider mammal conservation world." First CEO report, Q4 2007.

I am pleased to say that ten years on from my first report to trustees, the Trust has gone way beyond a national scat survey and completed its third and probably final

year of pine marten translocations in Wales as part of a £1.2M pine marten recovery project in southern Britain.

Furthermore, our forty horseshoe bat roosts (Fixed Asset value of £1.8M) continue to be a magnet for those interested in improving rural buildings to a very high VWT standard for lesser and greater horseshoe bats, and we continue to evolve and share new adaptations and monitoring methods. We also hold our position as the 'go to' organisation on polecat matters and our latest national survey published in 2016, indicating the spread of the species south and east, can only create more opportunities in the future. Our four mainstay species have provided a good foundation for further mammal conservation work and this year has been a real milestone in taking our work wider and deeper.

Our 'newish' Programme Managers have both now been in post for a full twelve months and our aim to further develop our mustelid and bat programmes is now starting to bear fruit. There are excellent synergistic partnerships developing for research and conservation activities, most notably with Cambridge University and their Conservation Evidence initiative, with The Woodland Trust and their 'Treescapes' approach, and with a number of other landscape-scale projects where our expertise has been called upon.

The pace is also picking up for other species which we have prioritised for some time but haven't had the resources to progress – so expect to hear more about our work on Bechstein's and barbastelle bats, stoats and weasels, red squirrels, water shrews and wildcat in the future, albeit at a considered and appropriate speed.

The Trust is in a healthy position - a good time I have decided for me to move on. At the end of the year, I will sadly be saying goodbye as CEO of VWT and moving on to the Woodland Trust as Director of Wales. This is personally a great step for me, working for an organisation that I much admire and is familiar to me, having worked for The Woodland Trust previously in the '90s. The double whammy is that I will still be able to

work closely with the VWT as a conservation partner! My replacement is being recruited as I write and I know that, given where the VWT is now, there will soon be a good quality candidate in post.

So it's goodbye but not farewell to an exciting and unique VWT; special thanks to the great team of staff and trustees that have supported me during my tenure, and to all the partners and funders that I have met along the way and with whom I have thoroughly enjoyed working. Seasons Greetings!



Natalie Buttriss

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Brown long-eared bat © Daniel Hargreaves

Spotlight on swarming

Dr Anita Glover, Bat Programme Manager



In early September, 100 bat workers descended on the Derbyshire Dales for the first ever Autumn Swarming Bat Conference.

I spent my years in research studying autumn swarming in bats, first in the Yorkshire Dales and then around Europe, so when Steve Roe, from the Derbyshire Bat

Conservation Group, suggested an Autumn Swarming Bat Conference and asked if I'd co-organise, I just had to say yes!

Some of you may be asking - what is autumn swarming? Put simply, it is the gathering of bats at the entrances of underground sites in late summer and throughout the autumn months. When it comes to wildlife spectacles, autumn swarming in bats is arguably the UK's best kept secret, and it doesn't just happen here but right across the temperate regions of Europe and North America.

Unlike highly visible phenomena, such as murmurations of starlings, bats swarm away from the gaze of wildlife enthusiasts. Only the most dedicated bat worker, one who is prepared to hike to a secluded cave or abandoned mine and wait

patiently for several hours after sunset, gets to witness swarming first-hand. The extent to which the bats swarm is highly variable night to night and even on a good night activity builds slowly - the anticipation is part of the magic! But when swarming really kicks in, the night air is thick with the sound of flapping wings, as groups of bats chase each other around the natural arena of a forest glade, or a limestone shakehole. Turn on a bat detector at this point and you are greeted with a cacophony of ultrasonic calls.

So why do bats swarm? This is not a question we have all the answers to yet, but the timing is significant because autumn is the mating season for bats. There are many amazing things about bats and one of them is the ability of females to store sperm through the

hibernation period, with fertilisation and the onset of pregnancy only happening once they emerge in the spring. Because swarming involves large numbers of bats from lots of different colonies, mating at swarming sites can facilitate geneflow between otherwise isolated populations. Ultimately, swarming sites become hibernation sites as the season progresses, so swarming may also involve information transfer between bats about where to spend the winter.

From the outset we had ambitious aims for the conference - it had to provide a platform for knowledge sharing and building capacity amongst an audience with a wide range of backgrounds and experience; it was also going to involve late night fieldwork in the Derbyshire Dales. Fortunately we enlisted another co-organiser - Naomi Webster, Training and Events Manager at the Bat Conservation Trust, and we were extremely lucky to have a great team of workshop coordinators and group leaders for the fieldwork.

Our keynote speaker, Professor John Altringham, set the scene for what was to be a fascinating series of presentations - from the latest research findings in Europe and Canada to locally-led projects that shed light on what's happening around the UK. Several talks and workshops highlighted the ways in which the innovative use of technology can give insight into the private lives of bats. Everything from light barrier systems coupled with cameras that demonstrate hundreds of Bechstein's bats enter a site to hibernate, when only tens are visible for counting during winter surveys, to the use of PIT tags (microchips) that enable bats to 'scan' themselves as they fly in/out of a cave entrance. Data from PIT tagged bats allowed researcher Dr Lynne Burns to examine the complexity of swarming bats social interactions, in other words 'who swarms with whom?' Turns out, in Canada at least, there is no evidence that adult females lead their offspring to swarming sites, but adult males do form social groups, possibly in order to cooperatively secure more matings?



(Above) Daan Dekeukelaire talks about his work radiotracking Bechstein's bats at swarming sites in Belgium © Steve Roe. (Bottom left) Practising putting up a triple high net © Steve Roe.

For many, the highlight of the weekend was catching swarming bats at caves and mines, even if the logistics of getting 100 bat workers and their equipment (including 25 harp traps) to eight underground sites was a huge challenge! For Lynne, who undertook her research in Nova Scotia, it was a chance to see a completely new suite of species and she was over the moon to hold her first brown long-eared bat. Steve and the DBCG have been studying these sites for several years, but have never had the capacity to catch at them all on one night and investigate whether bats (identified by site specific coloured chalk marks on the forearm) move between sites within an evening. In case you were wondering, they don't appear to. That's the thing about swarming sites, the bats that use them are incredibly faithful and so each site must be considered in its own right. In fact, during conference discussions, delegates identified a clear need to establish a database of UK swarming sites and seek protection through designation for sites of key importance.

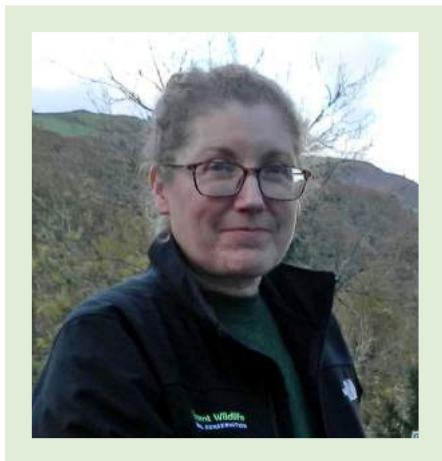




Pine marten © Patrick Wright

Final pine marten translocations

Dr Jenny MacPherson, Pine Marten Project Manager



In early autumn of this year, we were back in Scotland trapping pine martens at new sites that we had identified back in March. Twelve martens were selected for translocation and then released in Wales between September and early October, bringing the total number of animals translocated to 51.

Translocating a third and final tranche of 10-20 martens to the release region in mid Wales was an option in our contingency plans, and about a year ago the decision was taken to go ahead with this. The reason being that the most optimistic models suggested that, with a founder population of 30-40 animals it will take at least ten years for numbers to double. Confirmed breeding success in year 1 was lower (at 50%) than the published fecundity rates (for American martens) that were used in population viability analyses during the feasibility phase of the project. If this continues or shows high inter-annual variability (possibly linked to vole cycles) it will have an impact on the probability of establishment as well as the rate of spread.



(Above) Jenny baiting a pine marten trap in Scotland, August 2017

As the animals have established well-spaced home ranges across a fairly wide geographical area, the population will be at low density and vulnerable to demographic and environmental stochasticity for some time. Therefore, we decided it was sensible to top up the numbers now, rather than possibly having to do it later. With a larger founder population, the rate of increase and spread will be more rapid and the benefits seen sooner. A third year of releases is also enabling us to refine the use of some of the developing technology for tracking and non-invasive monitoring.

GPS data were successfully downloaded in the field from four of the five combined GPS/VHF collars that were trialled on some of the males released in 2016.

The success rate of the GPS units (percentage of scheduled attempts that found enough satellites to obtain a fix) was still relatively low (mean = 18.75%). However, these data added to the VHF fixes from radio tracking to provide more detailed information on the movements of these animals since release. In some cases, this has shown up outlying locations where an animal had not been radio tracked. For other animals, the GPS locations have provided information on where they were during periods when we had not located them with radio tracking. In 2016, a GPS fix interval of four hours was used to maximise the length of time animals could be tracked with the VHF element of the collars, as well as collect GPS data. However, recent studies have shown that miniature (<80g)



(Above) A translocated pine marten with GPS collar before release © Nick Upton

GPS collars are more efficient at collecting data from a “hot start”, with short fix intervals (≤ 2 hours). In 2017, nine of the translocated martens were fitted with Litetrack-30 GPS collars. The fix interval has been reduced to two hours on these to see if this results in a higher fix success rate.

Close encounters in mid Wales

David Bavin, Pine Marten Project Officer



We completed the third tranche of pine marten releases in October this year, marking the end of the translocation element of the project. The milestone went largely

unnoticed in the field due to our noses being hard to the ground tracking the latest releases, whilst keeping tabs on the comings and goings of the established animals. The third tranche of releases was different to the first two in that we selected two release sites to the north and north east of our previous release area. This was an attempt to facilitate colonisation of a gap that had developed between the core territories around the initial release sites and a clump of disparate territories for a few animals that had dispersed northwards, resulting in a gap around Machynlleth. As Jenny has

described, the current distribution is generally quite dispersed which is not surprising: the martens have been able to cherry pick the best habitat with little competition. The inherent risk with this, however, is that individuals could become isolated, and the population as a whole is more vulnerable to stochastic effects – unpredictable events such as predation, road traffic accident or unfortunate injury.

Our release sites this year were in Hafren forest, and Natural Resources Wales woodland nestled in the mountains south of Forge

The operation went smoothly and a subset of the new releases have occupied the immediate area, as hoped. A handful of animals dispersed rapidly from the release sites within the first 24 hours. We do most of the tracking between midday and midnight, but this means that we can sometimes miss extensive, rapid dispersal movements during the night. From experience, this isn't a major problem – we tend to search, reading the landscape, predicting as best as we can their preferred channels of movement, and in the majority of cases we then usually catch up with them very quickly. We have paid most attention to a couple of female martens in Hafren forest who have established over-wintering territories within separate parts of the forest. They have both selected areas with a predominant mix of old growth coupes of conifer, young scrubland dominated by broadleaf trees with thick undergrowth, and riparian habitat. We have erected a number of den boxes within their territories in the hope that we might entice them to remain there in the spring, and establish themselves long-term rather than searching further afield for greener pastures.

It was while we were tracking one of these females (PM40), that Alastair and I had a truly memorable encounter. We were homing in on PM40's location, listening to the blips of the sika getting stronger. They were intermittent however, so we assumed she was still some way off – the collars can transmit a signal up to a few kilometres. Imagine our surprise then when we turned a bend passed a steep rocky escarpment and she was in the middle of the track! She ran off, with the rolling gait characteristic



of the mustelids, up an embankment, and directly between two bemused hen pheasants, dropping out of view over the other side. One of the birds dimly registered her as something it should fly away from and fluttered heavily into the forest. The other remained there, lacking imagination (perhaps even a brain). We thought we had interrupted her hunting, so turned the engine off and sat, waiting. After an agony of listening to the subtle changes in blip quality from the sika (attuned to its highest sensitivity), she re-appeared; not in front of us, but directly side on to the truck, climbing ladder-like up the branches of a large spruce tree. She had something in her mouth, but it was too small to be a pheasant. She sat in full view, dismembering what became apparent as a pigeon squab. Downy fluff drifted down; one wing, then the other. We had an uninterrupted view of her, and watched enraptured as she went about her meal, relaxed in the safety of the tree. After about five minutes she was done, and moved fluidly back down the tree (so agile!), dropping out of sight.

(Above) Alastair radio-tracking pine martens in mid Wales

We exhaled and grinning dumbly, but were cut short in our reverie when she popped up in a closer tree just a few meters from the truck! This time she simply climbed ten feet or so up, had a look about, climbed down, crossed the track behind us and disappeared into the forest. I don't expect to have another encounter of that kind for a long time; a wild pine marten in her element, un-manipulated by bait or attractant. It might never happen again – but it has happened once and is etched in my memory. We are increasingly receiving sightings where people report encounters of this kind; unexpected, and enchanting. It grounds the pine martens reestablishment as something tangible and real and highlights something equally as important as the science, the research, and the ecological theory: the fact that something wonderful and wild has returned to Wales, enriching the landscape and spreading a hopeful message that what is endangered, damaged or lost can be recovered with expertise, willpower and the support of local communities.

Community action

Josie Bridges, Pine Marten Project Officer: Community Development



Since the last VWT newsletter, I have changed roles to Community Development Officer. For the last two years I have been Field Assistant on the project, but as the translocations have now finished and we are moving into the second phase of the project, away from the intense scientific observation and towards a less invasive and more community driven monitoring project, this new role has been developed.

All of the short-term goals of the pine marten project have been met,

with breeding and Welsh kits born this year but, to ensure that the long-term goal of a self-sustaining population happens, we need to continue to monitor our, now collarless, martens. To achieve this we are hoping to maintain interest in the project beyond the translocations, by working with local universities, working with local shoots and encouraging ecotourism related to martens. Most importantly we want the community to take ownership and really get involved in where the project goes as we move forward. As part of this, back in June, as a celebration of the translocations, we commissioned a wooden pine marten statue carved by local artist Grace Young-Monaghan to go in one of our first-year release sites. The unveiling was a great way to thank our volunteers, local landowners and everyone who has helped with the project. It now has pride of place in the Hafod Estate car park where it will hopefully get visitors interested and talking about the project.

We have had an amazing core group of volunteers over the last few years, who have been integral to the success of the translocation. They have been out radio-tracking with us every day (in all weathers!), have built release pens, raised our morale in the middle of the night whilst we're struggling to find martens, and even lent us their dogs to help detect marten scat. One of our long serving (suffering?) volunteers is a glutton for punishment and is now employed by us as our full-time Field Assistant. Over the next few years we are hoping to really expand our volunteer base and get many more people out there and trained to look for martens through scat surveys, camera traps and den box surveys.

Some of our volunteers have gone above and beyond their normal volunteering by helping us with our camera traps. Cameras are a great

(Below) Some of the pine marten project volunteers with Josie at the sculpture unveiling event.



way to keep track of the animals once they have had their collars removed, and having volunteers tasked with checking their 'local' marten's camera every week has been an enormous help. Some of our most far flung individuals could be a four-hour round trip for us to check and so we would be limited in the amount of times we could check it. Our volunteers' hard work, along with the many photos and sightings we are now regularly getting in from the public, has encouraged us to start a camera trap loan scheme where we lend out cameras to people who may have martens in their area. They then report back if and when they have a marten come to their camera and we can ID it for them. This will help us widen the area that we can be surveying for our now collarless animals.



(Above) One of our now collarless martens caught on camera trap.

Whilst knowing exactly what each of our martens is up to individually is less important now as we are moving into surveying the population as a whole, it is still useful to know who is who on the cameras. Not least because it allows us to know if any new kits turn up on any footage. So how do we tell them apart? Each marten has a unique bib that has a unique, individual pattern of spots and freckles. We take note of this pattern when the animal is under anaesthetic as part of the translocation process so we can then compare it to later footage.



(Above) Worcestershire Mammal Group about to start a scat survey.

We then use a simple bit of kit called a 'jiggler' (a long piece of flexible wire with a tea infuser filled with peanut butter at the end that the martens 'meerkat' up towards). This gives us a nice clear photo of a marten's bib. The peanut butter can sometimes attract unwanted visitors though who can cause havoc by running off with the tea strainer.

Occasionally you can't tell who is who on the cameras from the bibs so we have to turn to DNA collected from hair tubes. This is particularly useful for identifying our increasing numbers of kits for whom, of course, we don't have bib shots. A hair tube is a section of drain pipe with bait wired into the top and sticky patches attached to the bottom that the marten has to wiggle past to get to the bait (hopefully), leaving behind a few strands of hair that we can then send for DNA analysis. We are also having some success with using adapted squirrel feeders to collect hair samples, but this has come with its own problems; our martens find them very attractive and quite often photo-bomb the Mid Wales Red Squirrel Project feeders! PM16 and her three almost grown kits from this year

have taken a particular liking to the free peanuts on offer.

Some of our animals are much easier to keep track of than others post collar removal and this has led to one of our most charismatic martens, PM07, being adopted by Chester Zoo. You may remember Miss Piggy from various blog posts and videos in which she has featured. We now regularly send clips that we gather to Chester Zoo for them to share on their social media and help us spread awareness of the project and martens in general. More locally, Cletwr community cafe in Tre'r-ddol have adopted their own resident marten (PM29) and ran a 'name the pine marten' competition for him with their customers. The name Pippin was picked out of the hat and they will soon be displaying lots of information about him in their newly refurbished building.

With only 12 martens to radio-track this year and new field assistant Ali taking on the bulk of tracking brilliantly, it feels very relaxed compared to the first two years of the translocation. But with big scat surveys, den box refurbishment and potentially the building of a pine marten viewing hide in the future, I'm sure it won't stay quiet for long!

Back from the Brink

Kevin O'Hara, Pine Marten Project Officer, Back from the Brink



The Back from the Brink Programme is a partnership project with Natural England and several other wildlife conservation NGOs. It aims to prevent the extinction and promote the recovery of multiple threatened species in England. Some of you may already have met me but if not - I am an ecologist with a background in mammal conservation namely otters and water voles, but I have a particular penchant for the weasel clan. I have worked on a number of projects involving these species', working with volunteers and local communities in the north east of England to foster lasting legacies. For all these reasons, it is very exciting to be the new Pine Marten Project Officer in the north of England.

The initial response to the project has been fantastic, and despite a slow start on the ground we have made some fantastic progress in working with prospective and real partners to make sure we have the scope to fulfil the project's aims in the north of England. We held an introductory talk in October,

hosted by the Natural History Society of Northumbria at the University of Newcastle. I was truly overwhelmed by the response I had, with well over 200 people from all walks of life turning up on to listen to our vision and hopes for the future for pine martens in the region. Interest has progressed well with new volunteers signing up by the week. We hosted our first volunteer activities in November and December, with scat surveys being carried out for the first time in the Kielder Forest area. In the new year, we will carry out further searches in other parts of the forest district.



The project is still building on its contacts and we are reaching out to those many different organisations and individuals that can have a very valuable input into the prospects for pine martens in the region. With this in mind, I will be looking to farm out some remote cameras for the chance of catching a glimpse of our elusive martens. If you have the time and the energy, and more appropriately, the location to have some baited camera traps, then give me a call.

(Below) Volunteers getting ready for a scat survey in Kielder Forest, Northumberland.

The aim is to have a fairly self-sufficient team of volunteers to help survey around the forest districts more or less unsupervised. The more scats we recover the more chance we have of locating martens in the region, thus helping us decide on the best course of conservation actions for the future.

My focus for the next three and a half years will be to look for marten evidence, paving the way for and getting the community to support the presence of the pine marten in northern England once again. So here's to success and I hope to make better acquaintance with more of you in the years to come.



32nd European Mustelid Colloquium



Dr Kate McAney, Mammal Development Manager (Ireland)



It has been a number of years since I attended a European Mustelid Colloquium, so I was delighted to make my way to France for the 32nd colloquium, which took place in Lyon on 15-17 November. This event was attended by 112 delegates from 13 countries, reflecting the European distribution range of some of the members of the Family Mustelidae; Ireland to the west, Sweden to the north, Italy to the south and Russia to the east. Before describing some

of the presentations delivered, however, I shall attempt to explain what the term 'colloquium' means. My 1992 edition of Collins' Concise English Dictionary states that the noun 'colloquium', derived from the Latin 'colloquy', means (1) a gathering for discussion and (2) an academic seminar. A quick search of the Internet added 'an informal meeting for the exchange of views' and 'a type of conference with important question and answer periods'.

The colloquium in Lyon satisfied all these definitions and was the result of a French-British collaborative effort between the Laboratoire de Biométrie et Biologie Evolutive (University Claude Bernard Lyon1-CNRS), Office National de la Chasse et de la Faune Sauvage (NCFS) and The Vincent Wildlife Trust. Financial support was provided by the Laboratoire de Biométrie et

Biologie Evolutive, Office National de la Chasse et de la Faune Sauvage, CNRS DR07 Delegation Rhone Auvergne, Université Claude Bernard Lyon1, and the aptly named technology company, Polecat.

Twenty four oral papers, 27 posters and a workshop on the techniques for monitoring smaller mustelids provided a packed programme for the discussion of the main issues and challenges facing mustelids across Europe. In addition, four leading experts presented keynote addresses on the four themes by which the oral sessions were organised: Margarida Santos-Reis (Conservation Interventions); Robbie McDonald (Monitoring Mustelids); Izabela Wierzbowska (Mustelids in a Changing Landscape) and Pascal Fournier (Western Polecat).

With such a full timetable of presentations, it is possible to

give just a sense of some of the research presented. The importance of data collecting, monitoring, acting at local and national levels and a diverse educational programme were key points raised in several papers (France – otter; Switzerland – weasel and stoat; Ireland – pine marten). The ability of animals to move within an altered landscape was addressed with reference to the pine marten in the Italian Alps and a range of species in France, while the factors influencing diet were studied in badgers in Poland and small mustelids in the Netherlands.

The different ways genetic analysis can be used was demonstrated by a number of studies; for determining the genetic diversity of a pine marten population in Scotland; for estimating a national population of the pine marten in Ireland and for estimating vaccination coverage and population size for badgers in Wales. The behavioural traits of individual badgers were investigated to determine correlation with bovine TB (south-west England) while the personality traits of boldness, exploration and sociability of captive-bred European mink were tested to see if these conferred greater survival

released in the wild. The latter oral paper by Marianne Hagge (Stockholm University) won the prize for Best Non-Student Presentation, while the prize for Best Student Presentation was won by Aoibheann Gaughran (Trinity College, Dublin) for her paper investigating the ranging strategies of badgers in Ireland. Trinity College also scooped the prize for Best Student Poster Presentation with Rachel Byrne's hand-illustrated story of helminthic parasites in badgers. The prize for Best Non-Student Poster was won by Jaap Mulder for his research on identifying individual pine martens in the Netherlands.

The final session of the colloquium was devoted to the conservation status and current threats facing the polecat. Topics covered included a review of the status of the species throughout Europe, its exposure to infectious pathogens and to anticoagulant rodenticides.

The colloquium dinner at Chez Grand-Mere in the old city at the end of the first day provided a perfect back drop for delegates to continue the 'informal meeting for the exchange of views' - and I witnessed some very strong views being exchanged by winners and losers during the raffle!



(Above) Aoibheann Gaughran wins best student presentation. (Bottom left) Delegates attending the poster session during the colloquium.

On a serious note, the proceeds of the raffle will help fund student bursaries for the next colloquium. An important message from the first keynote lecturer, Margarida Santos-Reis, who presented her literature review of the research conducted on mustelids in the years up to 2017, was that researchers have not been adequately addressing the conservation issues facing many species. She stressed the need for research to be conducted at a much broader scale to address the impacts on mustelids of unsustainable exploitation of resources, climate change and other anthropogenic actions. While some of the papers presented at Lyon indicated that a wider approach to research topics is being adopted (for example, the use of social science techniques to reveal perceptions about a translocated population of pine marten in Wales), there is still scope for developing new ways to inform the wider community about the benefits to society that mustelids provide and to explore alternative fields (and funding sources) for research. Judging by the enthusiasm and conviction of the delegates attending the 32nd colloquium, I am confident that such challenges will be taken up and reported on at the next one in 2019.





Stoat © Brian Shackleton

Stoatally impossible or weasely easy?! Looking for stoats and weasels...

Lizzie Croose, Mustelid Conservation Officer



Monitoring and gathering data on stoats and weasels in Britain has proved challenging and has been somewhat of a thorn in VWT's side for a few years! Stoats and weasels do not leave easily visible field signs and are generally elusive.

They are rarely seen, other than occasional glimpses of one running across a road at speed like a rocket-powered sausage! Comparatively little is known about stoats and weasels in Britain, particularly their population trends, so there is a need to establish a robust monitoring method to gather data on both species. This is especially pertinent if a wider-scale survey is to be conducted in the future.

During the summer/autumn, we trialled a method used successfully to detect weasels, stoats and ferrets in New Zealand, where these species are non-native and invasive. This involved setting up



(Above) Volunteer Kiri Stone applying weasel lure to a tree.

monitoring stations comprising a camera trap mounted on a tree and angled downwards, and a commercial weasel lure imported from the United States. These lures are manufactured to be very pungent and irresistibly attractive to a variety of species (but are incredibly repulsive to humans!) and we trialled two different brands. Working with Worcestershire Mammal Group, we set up the monitoring stations at two sites managed by Worcestershire Wildlife Trust.

Over the course of ten weeks, the cameras captured footage of a variety of mammal species including the ubiquitous grey squirrel, badger, fox, roe deer, muntjac, rabbit, countless mice and voles, polecat and one weasel. We are still looking through the footage but so far, no stoats were recorded on the cameras, even

though one was seen near to one of the cameras at one of the sites during the trial! Some species, such as badgers and muntjac, were certainly showing interest in the lure and appeared to be scenting it in the footage.

In summary, we found that despite one detection of a weasel, stoats and weasels weren't weasely attracted to the cameras and the lure, so it is still a work in progress! The next step is to trial different methods at a variety of other sites, using approaches recently developed in other European countries.

Special thanks to Poppy Morris, Jane Sedgely-Strachan and Kiri Stone from Worcestershire Mammal Group and Dominique Cragg from Worcestershire Wildlife Trust for their help with the study.



(Top) A daytime visit by a fox (Bottom) Spot the weasel! (at the base of the tree).

Going Wild in Galway

Ruth Hanniffy, Ireland Projects Support Officer



For the past two years Galway has gone wild...for wildlife! 2017 marked the second annual celebration of Galway's wildlife as part of Ireland's National Biodiversity Week, and thanks to

our project being chosen as one of the two National Flagship events by the Irish Environmental Network (IEN), the funding we received meant this year was bigger and better than before. The two day event was organised by the VWT in partnership with BirdWatch Ireland and NEAR Health¹ with funding from the IEN, Bat Conservation Ireland and NEAR Health, and we brought together the best of Galway's people and nature.

In 2016, we launched 'Go Wild!' The purpose behind this festival of wildlife is best captured by a quote from Sir David Attenborough "No one will protect what they don't care

about; and no one will care about what they have never experienced". Our goal was simple: to celebrate the unique natural heritage of Galway City whilst harnessing the interest and enthusiasm that exists for our local wildlife. With red squirrels, pine martens, Irish stoats and lesser horseshoe bats within the city boundaries, we have an important natural heritage to protect. We hoped people would recognise the value of their local environment with the help of experts from BirdWatch Ireland, NEAR Health, Irish Wildlife Trust, Galway Bat Group, Irish Whale & Dolphin Group, Swift Conservation Ireland, National University of Ireland, Galway and freshwater ecologists Heather Lally and Martin Gammell from Galway-Mayo Institute of Technology.

There is a connection between biodiversity and all aspects of our lives and we are innately aware that there are significant benefits from increasing how much time we spend interacting with the natural world. Yet there is often a disconnect, particularly in urban areas, between people and nature. The Central Statistics Office reports that over a quarter of adults have volunteered in Ireland. Studies show, however, that the Irish environmental sub-sector is quite small both within the Irish voluntary sector as a whole and compared to environmental NGOs in Europe. Government funding in Ireland is €3.1m compared to €12.27m to €21.1m in Northern Ireland and €240m to €368m in the UK (depending on the system of assessment). Ireland lacks important features of other countries, such as lottery and philanthropic funding². With big goals to foster the environmental volunteers and spokespeople of the future whilst reconnecting people with nature, there was no time to waste. The team set to organising a weekend of free wildlife events making nature



accessible to people of all ages and interest levels with talks, fieldtrips, workshops and wildlife documentary screenings!

Our two-day event began at 4:30am on Saturday 20th May with a dawn chorus led by John Lusby, Raptor Conservation Officer with BirdWatch Ireland. We began at Silver Strand, a beautiful sandy beach overlooking Galway bay on the western edge of the city and

walked through nearby woodlands, between intertidal meadows and along the beach to overhanging cliffs where we marvelled at aerial displays from sand martins flying to their tunnels. The group recorded 35 different bird species and I brought a bat detector to catch some dawn flying pipistrelles, checked Longworth traps for a sleepy bank vole and looked for signs of stoats on trail cameras. After two and a half hours we were still wildlife watching! The group took part in a NEAR Health questionnaire about how they felt by spending this time out in nature

(Above) Dawn chorus with John Lusby at Silver Strand beach. (Below) Organisers and some of the participants of Go Wild in Galway 2017.



(showing impressive enthusiasm at 4.30am!) and also completed the first part of our wildlife spotting competition. It was a fantastic start to Go Wild 2017!

Back at 'Go Wild HQ' in the National University of Ireland, the hall was filled with stands, displays, information to take away, specimens, samples and experts from each organisation were on-hand to talk about all things wild – what a great buzz of excitement there was in the air! Members of the public could choose from a full schedule of walks and talks ranging from NEAR Health where participants learned about their role in their local environment and its role in their health and wellbeing to Birds of Galway city; Irish whales and dolphins; The secret world of mammals; Otters of Galway; Water plants and insects, and Kate McAney fascinated the audience with 'Galway's bats - making headlines since the 1800s'. For the second year running, Go Wild was blessed with a gloriously sunny day and we led fieldtrips in the University campus and the city - checking the Longworth traps we had set at 3am that morning!

It was worth the early start and an excited audience watched as we demonstrated how to handle and identify bank voles which had been live captured, whilst looking for birds nesting and flying along the rivers and canals of Galway city - taking the total number of birds identified to 45! It was a perfect opportunity to discuss the habitat needs of animals in the wild and value of a healthy ecosystem, including in urban environments.

Back at HQ Tom Cuffe ran a children's workshop with facts



(Above) Ruth demonstrating how to handle and identify bank voles. (Right top) Children's workshop run by Tom Cuffe. (Right bottom) Field trip with Heather Lally on the banks of the River Corrib.

about wild creatures, and taught them to create their own animals using origami. Gesche Kindermann and Caitriona Carlin led a workshop on restoring health and wellbeing through contact with nature, on behalf of NEAR Health, NUI Galway. The aim of the workshop was to envisage a nearby healthy future space for people and wildlife and then work out how to create it – their senses aided by their location among willow trees alongside the river Corrib. Afterwards Tom Gorman, Heather Lally and John Lusby led a field trip along the banks of the River Corrib to examine otter spraint, identify birds by their call and through sightings and identify aquatic invertebrates and the nature of their various life stages from kick samples taken in the river.



Sitting in the glorious sunshine, surrounded by people brought together by Go Wild and now enthralled in the natural world I wanted to pinch myself - this is what it was all about. Disconnecting from screens and reconnecting with nature. Yet there was so much more to come...and at sunset Galway Bat Group led a bat walk from Galway Cathedral along the River Corrib where people learned about the ecology of Irish bats and heard the echolocation calls of Daubenton's and Leisler's bats and Soprano pipistrelles. We finished our walk at the caddisfly trap to bring Day 1 of Go Wild in Galway to a close.

Day 2 took place at renowned Galway theatre: An Taibhdhearc where Go Wild brought two wildlife documentaries from Crossing the Line Films, an award-winning Irish production company, to the big screen. With butterflies in my stomach I took to the stage and welcomed everyone to what was to be a very special evening. The first documentary was Wild Cities – Galway, presented by John Lusby and part of a national series revealing Galway's wildest and most secretive residents. Highlights included stunning slow motion footage of lesser horseshoe bats in a castle on the edge of the city and charismatic otters in Galway's canals.



(Above) Screening of 'Wild Cities' at An Taibhdhearc Theatre.



After refreshments, the second screening of the night began. Éire Fhiáin – An Cósta Thiar is natural history filmmaking at its best and takes the viewer on a journey along the 1,600km of rock and ocean that make up Ireland's Atlantic edge. Enigmatic wildlife is set against stunning land and seascapes in a two hour documentary presented by Eoin Warner in the Irish language. In one scene the audience laughed along at two playful pine martens on the big screen, delighting in the creatures. It was a moment I won't forget.

Afterwards we held a panel discussion with both presenters onstage to share their experiences of the filming and we talked about the effect Ireland's wild places have had on our lives and our health and wellbeing. The audience were keen to discuss wildlife conservation, the natural world from an Irish context and how we could use these documentaries to reach a larger audience, including decision makers.

We hope that by helping people to experience nature on their doorstep they will feel moved to care about and protect it.



(Top) Bat walk at Galway Cathedral with Galway Bat Group. (Above) Panel discussion following the screening of Éire Fhiáin.

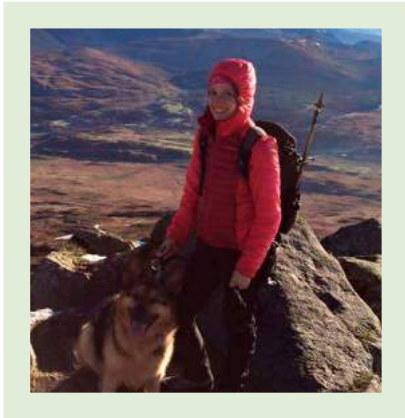
With the quickening pace of life and technology, the need to look to our natural world for escape and solace is more important than ever. Go Wild has since continued into Heritage Week and Science Week where we ran Go Wild Nature Camps for children with funding from The Heritage Council, Galway County Council, Galway-Mayo Institute of Technology and European Green Leaf. We set ourselves a big task to develop the environmental guardians of the future, but after Going Wild in Galway...it feels very possible.

¹Nature and Environment to Attain and Restore (NEAR) Health (kerinstitute.ie/project/near-health/)

²Funding Environmental Non-Governmental Organisations In Ireland; Irish Environmental Network, 2015.

New Volunteer Coordinator

Gemma Fisher joins the VWT



This October, I joined the VWT as its Volunteer Coordinator, through the Charityworks graduate scheme. This was a first for the VWT so it's great to have been part of the developing partnership which aims to create a bridge into the charity sector for recent graduates. My main role will be to develop our volunteer programme in a way that recognises and embraces the unique insights, skills, motivations and life experiences that VWT volunteers bring to the table, whilst also aligning these elements to the current and future vision of the Trust.

Prior to joining VWT, I have worked with a range of youth organisations in the UK and USA which aim to develop connections between individuals, the outdoors and wider society. The ongoing drive to develop programmes within the outdoor environment led me to completing a BSc in Outdoor Education, and is continuing to keep my motivation afloat as I near the completion of a post graduate degree in Social Research focusing on Environmental and Societal connections.

Since joining the Trust, I have been lucky enough to have visited the pine marten team in Wales, which involved two days of winding our way around forest tracks and hopping over woodland streams and fallen trees, whilst radiotracking some of the translocated pine martens. I also attended some interesting conferences, before hitting the road and visiting some of the staff and volunteers at a few of the Trust's bat reserves – which also included an amazing opportunity to see some horseshoe bats up close and personal!

A recent highlight has been a meeting in Wales; organised by the PMRP and attended by those from the surrounding community, some of whom have actively contributed to the project. It was great to hear first-hand about people's experiences and enthusiasm around sharing their local environment with the martens, with some members of the audience able to identify their resident pine martens from the video footage on-screen!



(Above) Visiting a horseshoe bat roost in Wales
(Below) Out radiotracking pine marten in Wales.

Over the coming weeks and months, I will build a bigger picture of volunteer contributions and impacts across the VWT, and use this as the foundations for future participation and engagement development across the Trust. An upcoming visit to VWT sites in Ireland, as well as a trip to visit our Back from the Brink project in Northumberland will further help to create this bigger picture.

It would be great to hear more from those individuals who choose to share their time with the VWT through volunteering, as it is those people who help enable the Trust to continue its ongoing legacy and presence within the field of mammal conservation.





The three 'old ladies'

Colin Morris, Nature Reserves Manager



Many of you I'm sure will be interested in an update of the 'last of the three' old bats living on a Dorset Wildlife Reserve in West Dorset.

As previously reported last year T7324 and T7326 failed to turn up and have almost certainly gone to the great tree-roost in the sky. The only survivor of the three is T7358. Initially ringed as a juvenile in August 2000, she is still going strong and had her 11th baby this summer. She has been recaptured on 47 occasions and is quite relaxed about being handled. Despite her age, her teeth are still remarkably clean and sharp. However, with age comes 'wear and tear' and the tip of her left ear is missing. The size and shape of the 'wound' suggests she may have

(Above) T7358 showing her distinctive 'war-wound'.

been bitten by another bat. I've often recorded noctules roosting alongside Bechstein's and noctules are big powerful animals with a strong bite, sharp teeth and a short temper! She is now entering her 18th year and is the oldest Bechstein's bat we have recorded in the UK.

For more information on Bechstein's bats, please visit: www.vwt.org.uk/species/bechsteins-bat/

Rescuing a reserve

Bryanston 'Old Kitchens' receives a new lease of life



Bryanston 'Old Kitchens' is one of the longest studied greater horseshoe nursery roosts in the UK. It was studied by Andrew Watson and Michael Blackmore in the 1950s, and from then until the 1990s by Bob Stebbings and Henry Arnold. In those early days of bat research, the building was primarily a summer roost, with just a handful of animals overwintering there. To encourage more bats to stay, in 1989 an artificial cave was excavated from the solid rock – perhaps a World first.

(Below) 1989 - Excavation of the artificial cave in solid rock for hibernating bats. (Right) October 2017: Anita Glover fitting a section of cork insulation to the wall - completing the rebuilding before bats start to use it once again.



Under the directions of Dr Robert Stebbings, volunteers from the Dorset Bat Group, assisted by Maurice Webber dug a twelve metre 'T-shaped' tunnel, removing over 40 tons of chalk. The tunnel was extended a few years later, into the building using concrete blocks and timber to support the polystyrene insulation.

The one weakness in the construction was that after twenty-eight years of almost constant 100% humidity, the timber used to support the insulation began, not surprisingly, to rot and fail. This allowed the insulation to slump. Urgent work was required to ensure it didn't fully collapse.

Natural England (Dorset) was approached and permission was granted to allow the VWT to



(Above) September 2017: the timber had failed, allowing the polystyrene insulation to slump.

remove the insulation, and what remained of the rotten timber, to allow it to be rebuilt. In October, Anita Glover, the Trust's Bat Programme Manager and I dismantled the failing roof and replaced it; this time using a timber that was more water resistant.



Farm Links to Lessers

Dr Kate McAney, Mammal Development Manager (Ireland)



For many years I have been saying that the lesser horseshoe bat is a perfect species to include in an agri environment scheme (AE), because it is so dependent on features found on farms – old buildings, hedgerows, mature trees, woodland and because the provision of these need not negatively impact on farm productivity. All I needed was a suitable scheme to apply to. Well, my prayers were answered this year when our Department of Agriculture, Food and the Marine invited groups to make a submission under the European

Agricultural Fund for Rural Development (EAFRD), specifically under the European Innovation Partnerships Initiative (EIP). The EIP forms part of Ireland's Rural Development Programme 2014-2020 and is centred on groups coming together to develop and implement their innovative ideas for how they propose to address challenges they have identified. The difference between the EIP approach and that of our current national AE scheme (called Green Low-Carbon Agri-environment Scheme or GLAS) is that the EIP projects are locally-led, rather than operating at a national scale, and seek to address particular environmental and biodiversity challenges not addressed at the national level by GLAS. EIP projects are also known as Locally Led Agri-environment Schemes (LLAES). The only specific action for bats under GLAS is the erection of bat boxes (that cannot be used by lesser horseshoe bats), so in practical terms there are no measures to assist this species under GLAS.

Consequently, we submitted on January 29th an initial project proposal (along with over 100 other groups) for funding for an EIP project based in County Limerick for the lesser horseshoe bat. Our partners for the initial submission were our national Agriculture and Food Development Authority (Teagasc), two community-based companies based in rural Limerick (West Limerick Resources & Ballyhoura Development CLG) and an independent agri-environmental consultant, also based in the county. The title of our project is: 'Farm Links to Lessers: a farming biodiversity project for lesser horseshoe bats in Limerick'; the aim of which is to improve the roosting, commuting and foraging habitat for the several hundred horseshoe bats that are known to occur in the county. The lesser horseshoe bat in Ireland is found in just six counties along the west coast, with Limerick forming a key link between a genetically-diverse population to the north in counties Clare, Galway and Mayo, and a less genetically-diverse population to the south in Kerry and west Cork. Roost loss and habitat fragmentation are believed to be the primary reasons why so few horseshoe bats now occur in Limerick. By improving the habitat for these bats on farms across the county, we will be taking the first step in preventing the widening of the gap between the two subpopulations and possibly enabling bats to move more freely in the future along a north-south axis.



(Left) Kate at the Teagasc Information Event for Dairy Farmers in County Cork.

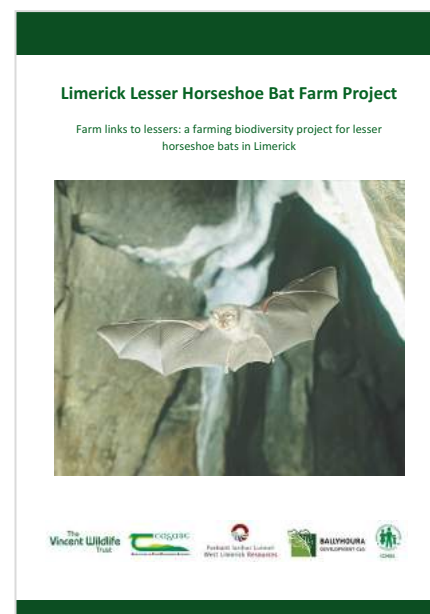
Fast forward to the middle of May when we were delighted to discover that we had made it through the Round 1 selection process and were one of 22 projects that would receive funding to further develop our ideas, so proceeding to a Round 2 selection process, which, at the time of writing, is still ongoing. I have to admit that my delight was soon replaced with quite a degree of trepidation. I fully appreciate the need for detail when applying for major funding, but a project plan with a total expected word count of 50,000 words and ten chapters was quite a challenge to undertake over the course of the summer.



(Above) Lesser horseshoe bat © Frank Greenaway
(Right) The Links to Lessers project plan.

We didn't submit 50,000 words (our plan was closer to 40,000), but I am extremely proud of our final submission because it is very much the result of a team effort and has been farmer-driven. As well as our original partners, our group now comprises representatives of the Irish Creamery Milk Suppliers Association (ICMSA) and two farmers, one based in the west of the county and one in the east, both of whom spent a great deal of time refining the practical conservation measures we believe are necessary for bats both at buildings and out on the farm. We now also have the support of an eight person Farmers Steering Group that attended meetings throughout the summer, often on the best day of the week for cutting silage. In addition, over 100 farmers attended meetings during the summer to hear about our proposal and their overwhelming support for the project provided me with the energy to keep writing and meet the deadline of 5pm on September 29th.

I don't wish to divulge too much detail about our plans at this stage, but I can state that our project is innovative in both scale and approach – not least because it directly involves farmers in monitoring the presence of the lesser horseshoe bat on their farms. It focusses on the county of Limerick because this county is strategically important for this species and is an area where there are few biodiversity initiatives in place. We hope to work on some 300 farms across an east-west distance of 70km and in so doing embrace the whole farming community across the farmed landscape. The approach we propose for selecting farms to enter the project and to progress through it over a five-year period involves the use of habitat connectivity and corridor identification software modelling tools that will help us be strategic in targeting areas for roost and habitat enhancement work.



More than once during the year I thought of a quotation from Oscar Wilde's play 'An Ideal Husband', in which he says 'When the gods wish to punish us they answer our prayers'. The possibility, however, of working with farmers in Limerick to conserve and enhance the lesser horseshoe bat population is one 'punishment' I would happily endure!



(Above) VWT's Josie and Alastair with Dr Claire Wordley and Professor Bill Sutherland during the Conservation Evidence workshop.

Conservation Evidence

The VWT becomes an 'Evidence Champion'

The VWT is delighted to be working in partnership with Conservation Evidence (CE) and we recently had a two-day workshop with the CE team at their office in Cambridge University's David Attenborough building, delivered by CE Communications and Engagement Officer Dr Claire Wordley and founder Professor Bill Sutherland.

Conservation Evidence summarises scientific evidence on different conservation interventions all around the world and makes it available for free, so anyone can read it and see what has worked and what hasn't. The aim of this is to help break down the barrier between science and practice, and give conservationists access to the latest and most relevant ecological knowledge to support better-informed decisions and more effective management.

The initiative also publishes new evidence in their online journal (also called Conservation Evidence) which is open-access and free to publish in.

The VWT are now 'Evidence Champions', meaning we've agreed to use Conservation Evidence in our project planning and aim to keep testing innovative conservation interventions and solutions and publish these results. VWT has a history of designing and trialling solutions to conservation problems, such as bespoke bat roosts and bat boxes for various bat species and a den box for pine martens. One of the main messages of the workshop was more creativity and innovation is needed to solve problems in conservation. To test our creative skills, we all took part in a challenge to design a

conservation solution using a variety of arts and crafts supplies; plasticine, card, pipe cleaners and wooden lolly sticks! We designed bespoke predator-proof chicken coops, complete with electrified fencing made out of pipe cleaners to deter predators, and an underpass to help polecats (made out of plasticine in this case!) safely cross underneath roads! The workshop gave us plenty of food for thought and highlighted gaps in our knowledge of species on which VWT works (primarily bats and mustelids) and ideas for future initiatives. We're really looking forward to working with Conservation Evidence and trialling more innovative conservation solutions and interventions.

To find out more about Conservation Evidence, visit their website: www.conservationevidence.com.

VWT PhD Students

The VWT supports and co-supervises a number of PhD students who study our priority species.

Pine martens & grey squirrels

Catherine McNicol, PhD Student



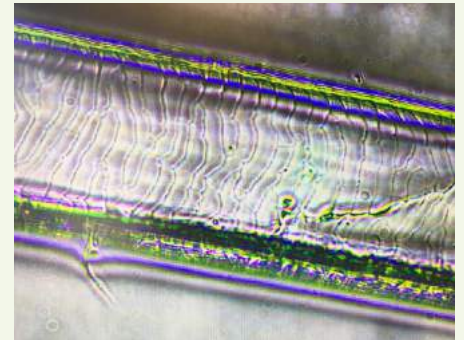
I am now in the third and final year of my PhD and it seems I have finally reached the end of field work. However, the end is not yet in sight as there are still squirrel videos to watch and pine marten scats to analyse. As well as this, I am now spending my time organising and analysing the mountains of movement and foraging data we have collected on grey squirrels since 2015. As with many ecological interactions, the pine marten – grey squirrel relationship is a complex one.

In May, I spent two months in Wales collecting data on the foraging behaviour of grey squirrels. This involved providing the squirrels with trays of sand with peanuts hidden in it. The squirrel's time spent at the tray, behaviour while foraging and amount of food consumed were

recorded. The aim is to investigate whether the presence of pine marten impacts these behaviours. We also tested the response of the squirrels to different predator scents. All of the video footage from this study awaits analysis in the long dark days of winter.

Meanwhile, I am currently working with a group of undergraduate students at the University of Exeter who are helping to prepare and analyse pine marten scats collected by the VWT and volunteers. Before we can figure out what the martens have been eating, we need to break the scats down and clean the remains found in them. Surprisingly they mainly consist of hair, and a lot of it. So after picking out small bones and seeds we

have to identify what prey species the hairs have originated from. Not an easy task. This involves making imprints of the hairs and looking at the patterns they have under a microscope. Once we can recognise the species by their hair, we will be able to build up a picture of marten diet in Scotland and Wales.



(Above) Microscope image of a hair imprint found in pine marten scat (Below) Scats being prepared for analysis.



Communities & conservation

David Bavin, PhD Student



A number of our team have just come back from Lyon where we attended the European Mustelid Colloquium; a fantastic event, sharing knowledge and building relationships with our European colleagues. I was able to present my research on local community perceptions and views towards our pine marten translocation work which forms part of my PhD. People underpin conservation and can determine whether conservation initiatives ultimately succeed or fail. It is therefore of central importance to fully understand how people feel towards our work, and to identify knowledge gaps and areas of concern (as well as people's aspirations) in order to incorporate local people into the process. This is particularly important at the planning stage when people can have valuable input into the feasibility process. If left until later, efforts can be perceived as a 'bolt on' mollification, rather than a genuine attempt at inclusivity.

I used a novel technique called Q method, which is a tool for discourse analysis, to investigate the local community's views towards the pine marten and the proposed translocation. I won't

describe the method here (which would fill another newsletter!), but I can be contacted for more details. The analysis revealed four dominant narratives within the community; three of which were broadly in support of the translocation whilst one was unequivocally opposed. The methodology enabled a rich interpretation and understanding of these distinct viewpoints, highlighting the relative importance of a number of issues and elements of our work; these will be described in detail when the work is published. One useful outcome from the results was the identification of two unifying points of consensus across all four narratives: 1) if pine martens had

such as the pine marten on other smaller predators, such as jays and crows. The work also highlighted some of the key concerns, such as livestock predation, impact on other wildlife and potential future unforeseen effects of an expanding pine marten population. With this knowledge, we were able to effectively target our information at public meetings and during our face-to-face farm visits to provide accurate, salient information. Accurate identification and incorporation of views prevents people feeling marginalised and fosters trust. I interviewed two sheep farmers in the initial stage of this study, both of whom did not believe that the pine marten translocation was a good idea.



(Top) Dave running a community meeting at the Hafod Hotel in Devil's Bridge.

a negative impact on grey squirrels, that was a good thing, and 2) a biodiverse local environment is desirable. These provided the building blocks for an engagement strategy that enthused and brought people together, though the purported relationship between pine martens and grey squirrels was treated cautiously and objectively. Rather, we focussed on the overall environmental benefits of restoring biodiversity to the wider environment, including the regulatory roll of top predators

However, they respected that the 'proper' approach had been taken and this has stimulated continued dialogue, resulting in trust and mutual respect. One of these farmers now regularly updates the VWT on activities that might potentially disturb the settlement of the pine martens. For us as conservationists, this is the ultimate goal: to inform and include local people to the point where they feel invested in and part of our work; not just a statistic in a box ticking exercise.



(Photo) Camera trap image of a pine marten on a squirrel feeder.

Investigating the recovery of a native predator

Keziah Hobson, PhD Student



My PhD project was developed because of the potential for the pine marten to reduce grey squirrel populations in the UK. The grey squirrel is an invasive species that has caused devastating impacts to the native red squirrel, and broadleaf forestry by damaging trees through bark stripping. However, with the recovery of any predator there is also potential for perceived or genuine negative impacts on other wildlife and rural livelihoods. My research therefore aims to better understand the interaction between people and pine marten, by understanding the dynamics of pine marten populations within areas

comprising different human land uses and habitats, and gathering information on the costs and benefits of living alongside pine marten and how these have shaped people's attitudes towards the species.

I have just entered the second year of my four-year NERC Industrial CASE Studentship with the University of Aberdeen and Forest Enterprise England, with several project partners including The Vincent Wildlife Trust, Red Squirrels Northern England, Forest Research and the Confederation of Forest Industries (CONFOR). I completed a two-month pilot survey of pine marten in Aberdeenshire at the start of July this year. I collected a total of 33 pine marten hair samples, using 37 feeders which I checked five times during the survey. For my next survey, I hope to use up to 100 feeders in each study area to increase the number of pine martens recorded and collect more information on individual movement within the landscape.

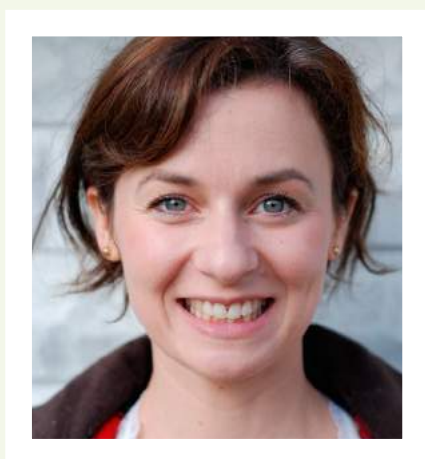
After my fieldwork, I made my first visit to the NERC Biomolecular Analysis Facility (NBAF) at the University of Sheffield where I will be undertaking the genetic analysis for my research. I spent an exciting month there extracting DNA from the hair and scat samples I collected during my pilot, and undertaking some of the initial analyses on the DNA. I will return at the beginning of 2018 for a longer stint, working with the NBAF team to develop the set of genetic markers we will use to identify individual pine marten from all the samples collected. We hope this genetic set will provide greater resolution for my research and other studies on pine marten in the future. Using this information, I will be able to estimate population density and how this varies within a landscape, and estimate the demographic rates of different populations.

I look forward to keeping you updated on the progress of my research!



Risks to recovery: polecats in Britain

Katie Sainsbury, PhD Student



I am now in the third year of my PhD on the risks to the recovery of polecats in Britain. I have spent much of the last year analysing data that I collected during the first two years of my PhD. This is primarily related to the likelihood and magnitude of secondary exposure to second generation anti-coagulant rodenticides in polecats. Polecats are exposed by eating contaminated prey such as rats or other small rodents. I have been analysing differences in levels of exposure by animal age, sex, location collected from, time of year collected and their foraging

habits. The polecats that we analysed came from carcasses collected during the last VWT National Polecat Survey of Great Britain. We used the livers for rodenticides analysis, whiskers for analysing variation in foraging and teeth for aging. We aged the animals by cleaning their canine teeth and sending them to Matson's Laboratory in the USA where they are sectioned and the cementum layers counted on slides – a little like aging trees by counting the rings on a cross section of the trunk!



(Above) Clean polecat canine tooth prior to sectioning.

As well as these parts of the carcasses being used for my analysis, blood, brain and lung



(Above) Polecat whisker being prepared for stable isotope analysis which provides insights into foraging behaviour over time.

samples have also been used by an MSc student, Kari-Anne Heald, to look at prevalence of disease in polecats. Several undergraduate students are currently analysing the stomach contents where they were available, to look at variation in polecat diet. So all in all the carcasses have been put to very good use! Most recently, I have attended the Mustelid Colloquium in Lyon which was a fantastic opportunity to meet other polecat researchers (there aren't very many of us) and find out more about the wide range of research and conservation work that is ongoing for mustelids in general. It was a very insightful few days and so I'm now heading into the last nine months of my PhD refreshed and inspired!

Keeping connected: greater horseshoe bats in the landscape

Domhnall Finch, PhD Student



For the last year of my PhD, we have delved even further into examining the issue surrounding connectivity in the landscape and what anthropogenic factors might influence the movement of the greater horseshoe bat.

Last year's surveys proved to be quite successful with large quantities of data collected that could then be used to ground validate our functional connectivity models. We are hoping these models will allow us to improve our current understanding of the bats' dispersal from their roost locations and allow us to engage local councils and planners to create a visual tool to reduce any further impact on the species. This year's surveys lead to slightly more practical field experiments being carried out to examine and quantify the influence individual landscape features have on the movement of the greater horseshoe bat. These included

features such as roads, linear features and open habitats such as arable fields and grassland, but further analysis is required to complete this area of my PhD research.



(Above) Greater horseshoe bat © Frank Greenaway.

Brighter future for Bechstein's bat

Patrick Wright, PhD Student



I started my PhD three years ago without having ever seen a Bechstein's bat beforehand.

Today, after two field seasons and many long days of lab work and data analysis, I am very close to its completion. The last few months of my PhD is of course focused around the dreaded write up, but also on trying to publish my research and drawing the main conclusions from our findings.

After collecting samples from eight Bechstein's populations in Britain, it appears that the British population is healthier than we had thought as we found little

inbreeding throughout Britain. Although our populations seemed to be well connected, it has been particularly interesting to find that woodlands still remain primordial for maintaining healthy Bechstein's populations. With The Vincent Wildlife Trust, we now hope to apply the findings from my thesis as a way to better monitor the British population of Bechstein's bats, in order to better protect the species in the future.

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