

Newsletter #15

December 2022

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Welcome

from Vincent Wildlife Trust's CEO, Lucy Rogers



Welcome to the 15th issue of our newsletter highlighting our work in 2022.

Once again this year, I am delighted to be able to say that VWT's staff, students, volunteers and partners have worked effectively together to deliver an impressive number of exciting and innovative projects, including several new areas of work that contribute to the delivery of our [Ten-Year Strategy](#).

For example, in early 2022, we concluded a study carried out on behalf of the Lynx to Scotland project, a partnership of Scotland the Big Picture and Trees for Life, to explore the views of local groups on lynx reintroduction. And at the end of 2022, we visited Romania and met with organisations that we hope to be working with in 2023 on the conservation of the Critically Endangered European mink.

As usual, our volunteers have made a tremendous contribution to our work at our bat reserves. Following training during 2021, some have taken on responsibility as lead volunteers for the National Bat Monitoring Programme counts at a number of the reserves, as well as assisting with maintenance work and checking for impacts of the roost resilience work carried out last year in England. Volunteers also helped us with the long-term monitoring of Bechstein's and barbastelle bats at two woodland study sites.

As part of our contribution to the Natur am Byth! partnership we visited the Pembrokeshire Show to gauge the level of interest and knowledge of barbastelles amongst local communities and individuals.

Working in partnership with Mulkear Catchment Ltd. in Ireland on a European Innovation Partnership (EIP) project, we launched an exciting initiative to work with farmers to build bat houses for lesser horseshoe bats within the Mulkear River Catchment. We also worked with National Parks and Wildlife Service to co-author an Action Plan for lesser horseshoe bats, the first of its kind in Ireland.

We were hugely relieved when the Sussex Bat Appeal that we launched in September 2021 managed to raise the funds to secure the site of a newly discovered greater horseshoe bat colony in Sussex early this year. We have continued to work with Sussex Bat Group to raise funds to restore the derelict building and to start work clearing the site in preparation for the building work to begin.

We welcomed Dr Stephanie Johnstone, Martens on the Move Project Manager; Rachel Leach, Administration Assistant; Daniel Hargreaves, Bat Programme Manager; Averil Clother, Operations Manager; and Rowena Staff, Volunteering and Community Engagement Officer (Maternity Cover). Sadly, we said goodbye to Helen Henderson, Operations Manager, and Lara Semple, Volunteering and Community Engagement Officer (Maternity Cover).

Finally, an enormous and heartfelt Thank You to all our staff, volunteers and Trustees who have continued to work so brilliantly this year for threatened mammal species in Britain, Ireland and mainland Europe.

Stop Press... Stop Press... Stop Press...

Papers, reports and articles published this year

Each year, VWT staff and students publish a range of academic papers, scientific reports and articles to share the research, the first-hand experiences and the learning. This year's publications cover pine martens, greater horseshoe bats, lesser horseshoe bats and European mink.

Papers and Reports

January 2022

Lenihan, P., Flaherty, M., Finch, D. and McAney, K. (2021) Modelling connectivity pathways between Lesser Horseshoe Bat (*Rhinolophus hipposideros* (Bechstein)) maternity roosts in Ireland. *Irish Naturalists' Journal* 38: 14-19.

March 2022

Patrick G.R. Wright, Elizabeth Croose, Jenny MacPherson (2022) A global review of the conservation threats and status of mustelids. *Mammal Review*
<https://doi.org/10.1111/mam.12288>

Domhnall Finch, Henry Schofield, Josh Firth, Fiona Mathews (2022) Social networks of the greater horseshoe bat during the hibernation season: a landscape-scale case study. *Animal Behaviour* 188: 25-34. <https://doi.org/10.1016/j.anbehav.2022.03.019>

July 2022

Elizabeth Croose, Ruth Hanniffy, Andrew Harrington, Madis Põdra, Asun Gómez, Polly L. Bolton, *et al.* (2022) Mink on the brink: Comparing survey methods for detecting a Critically Endangered carnivore, the European mink *Mustela lutreola*. *bioRxiv*.
<https://doi.org/10.1101/2022.07.12.499692>

August 2022

McAney, K. (2022) Co-author of Chapter on Mammals in Volume 10: Land and Freshwater Fauna in New Survey of Clare Island by Royal Irish Academy

Fiona Mathews, Max Anderson, Frazer Coomber, Domhnall Finch, Charlotte Le Marquand, Kieran O'Malley, & Patrick G.R. Wright, Common Pipistrelle *Pipistrellus pipistrellus* (Schreber, 1774). *Handbook of the Mammals of Europe*. Springer International Publishing.

September 2022

Patrick G. R. Wright, Tom Kitching, Ruth Hanniffy, Marina Bollo Palacios, Kate McAney & Henry Schofield (2022), Effect of roost management on populations trends of *Rhinolophus hipposideros* and *Rhinolophus ferrumequinum* in Britain and Ireland, *Conservation Evidence*, 19, 21-26.

October 2022

Henry Schofield, Guido Reiter, & Serena E. Dool (2022) Lesser Horseshoe Bat *Rhinolophus hipposideros* (André, 1797). *Handbook of the Mammals of Europe*. Springer International Publishing.

Graham Etherington, Adam Ciezarek, Rebecca Shaw, Johan Michaux, Elizabeth Croose, Wilfried Haerty, Frederica Di Palma (2022) Extensive genome introgression between domestic ferret and European polecat during population recovery in Great Britain. *Journal of Heredity* 113: 500-515. <https://10.1093/jhered/esac038>

Articles

March 2022

Increasing efforts for greater horseshoe bats by Julia Bracewell [CJS articles](#)

April 2022

Poo Corner Polecat ID Guide by Lizzie Croose [BBC Wildlife Magazine](#)

May 2022

Rare bat breeding in Sussex by Hilary Macmillan [Sussex Wildlife Trust magazine](#)

November 2022

Pine martens: past, present and future by Jenny MacPherson [Woop Woop Magazine](#)

Videos

August 2022

A Safe Haven – The Sussex Bat Appeal

<https://vimeo.com/735838660>

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Welcome to new staff

Dr Stephanie Johnstone



Stephanie has spent her career in wildlife conservation and endangered species management, working with landowners and volunteers to achieve landscape-scale conservation outcomes for species such as the spotted-tailed quoll in Australia, red squirrels and pine martens in Scotland. She joined the Trust in May 2022 as Martens on the Move Project Manager to lead the development phase of a potential new four-year National Lottery Heritage Fund focusing on pine martens and people.

Rachel Leach



Rachel joined the Trust in May 2022 as Administration Assistant. She has a background in arts and cultural heritage with a degree in art and psychology. She has worked with the National Trust and Oxford University in business support and higher education administration. She also has a background in arts and cultural heritage with a degree in art

and psychology, and postgraduate qualifications in both gallery studies and higher education administration.

Daniel Hargreaves



Daniel joined the Trust in June 2022 as Bat Programme Manager. He rescued his first bat when he was seven years old and has been fascinated by bats ever since. Daniel has been involved with numerous local and global bat conservation projects, helping to develop conservation initiatives in a number of countries, including Costa Rica, Thailand and Zambia. He is also developing the National Nathusius Pipistrelle Project to understand the migratory behaviour of this fascinating species.

Averil Clothier



Averil joined the VWT team in October 2022 as Operations Manager. She is keen to contribute to the local and national charitable sector, particularly in the arenas of

sustainability and environmental conservation, having previously worked in HR and Administration at Herefordshire Wildlife Trust and the Bulmer/Brightspace Foundation. Prior to working for these charities, Averil was involved with local council administration, being a Clerk to two parish councils and a Project Officer for Herefordshire Association of Local Councils. She has a Bachelor of Arts in History and a Masters in Arthurian Literature.

Rowena Staff



Rowena joined the Trust in October 2022 as Volunteering and Community Engagement Officer (Maternity Cover). She has worked for Animal and Plant Health Agency, managing projects on badger ecology and TB, for RSPB, Whale and Dolphin Conservation, and the Mammal Society, carrying out wildlife surveys, heading up volunteering projects, and organising training and conferences. As a keen volunteer herself, she helps with bird and dormouse surveys. Rowena is also an enthusiastic member of the Wildlife Sound Recording Society.

Sussex Bat Appeal... we're nearly there!

Lucy Rogers, CEO

Photo: ©Andrew McCarthy



What a difference a year makes...

Last year we wrote about the discovery of a pioneer group of greater horseshoe bats breeding for the first time in southeast England for more than 100 years... and that their chosen maternity roost was a derelict stable block due to be sold on the open market for development. To save this crucial steppingstone for greater horseshoe bats to return to their former ranges in the south of England, VWT joined forces with Sussex Bat Group (SBG) and launched the Sussex Bat Appeal to purchase the building.

We had just six months to raise the funds before the building was due to be sold, but thanks to the generosity of individuals and organisations in their donations to the Sussex Bat Appeal, we did it! We raised enough funds to buy the stable block at the end of February this year... just in time for the return of a small group of ten greater horseshoe females which went on to successfully raise five pups in the summer.

While this is a huge achievement in itself, we can't stop there. The building is falling apart and will soon become uninhabitable for the bats, so we are continuing to work with SBG to raise the funding needed to replace the roof and to renovate the building. This will help to ensure that it is a safe and secure maternity roost for greater horseshoe bats in perpetuity and to give the species a chance to recolonise its former range in the south of England.

At the time of writing, we are nearly there... but we still have around £100K to raise. Watch out for more fundraising events and find out more at the following sites:

www.vwt.org.uk/sussex-bat-appeal
and [Sussex Bat Group Just Giving](#)

Sussex Bat Appeal, Vincent Wildlife Trust, 3-4 Bronsil Courtyard, Eastnor, Ledbury, Herefordshire HR8 1EP



Volunteering success across 2022

Rowena Staff, Volunteering and Community Engagement Officer (Maternity Cover)

©Daniel Hargreaves



It's been another fantastic year for volunteering at VWT with dedicated volunteers contributing almost 1,200 hours of their time to a variety of projects, allowing VWT to deliver even further towards the conservation of threatened mammals in Britain, Ireland and further afield.

The hard work started early on in 2022 where woolly hats and warm coats were the order of the day for maintenance work at our bat reserves. Overgrown vegetation was cut back to maintain access and promote more plant diversity, and neglected ponds were cleared out to once again support wildlife.

As summer rolled around, the focus switched to balmy evenings and lesser and greater horseshoe bat emergence surveys at reserves across England, Wales and Ireland. The information collected by volunteers from these surveys is not only critical for VWT to monitor how the bat populations are doing within the reserves, but it also

contributes to the National Bat Monitoring Programme to inform national population trends.

At our newly acquired greater horseshoe bat reserve in West Sussex, volunteers from Surrey and Sussex Bat Groups were on site in spring and again in autumn, contributing an incredible 165 hours clearing the site, ready for vital restoration work to take place in the winter.

Other volunteers across Britain and Ireland showed their versatility and carried out a number of other important tasks this year — catching and radiotracking barbastelle bats, carrying out bat box checks, monitoring trail cameras for mustelids, creating education materials and reviewing bat footage, to name but a few.

In October we had our first ever online VWT Volunteer Conference with presentations from Katie Allan and Kieran O'Malley about their exciting PhD projects, updates on bat emergence survey findings from across our British and Irish reserves, and an introduction from Stephanie Johnstone to the Martens on the Move project. We had very positive feedback from the conference, and we want to build on that success and to have this as a regular fixture in the VWT calendar.

Looking forwards to 2023, the Natur Am Byth! project will be calling on local communities in Pembrokeshire to help us better understand the distribution and status of barbastelle bats in the region, and in Ireland we will be appealing for help with the upcoming Irish Stoat survey. We also hope to secure funding for a new four-year pine marten project (Martens on the Move), which will extend the reach of our volunteering opportunities to more diverse groups. An exciting opportunity to open up conservation to new audiences.

More and more we are recognising the benefits of volunteering — from meeting like-minded people and getting physically active to learning new skills and directly contributing towards conservation. I have only been with VWT a short time but it's clear from the feedback that I've heard and the smiling faces in the photographs that volunteering with VWT can be extremely enjoyable and fulfilling. Even those tasked with clearing bat droppings do so without so much as a grumble!

VWT would like to say a big thank you to all volunteers who have worked hard in 2022 to help us achieve our aims and ambitions. Your skills and continuing support are greatly valued, and we look forward to working with you again in 2023.

Searching for the three 'medium-sized' horseshoe bats

Patrick Wright, Senior Science and Research Officer



We often tend to forget that in continental Europe, Rhinolophid bats (horseshoe bats) do not only consist of lesser and greater horseshoe bats. In fact, there are three other species – Mehely's horseshoe bat, Blasius' horseshoe bat and Mediterranean horseshoe bat – distributed along the Mediterranean basin, which we conveniently call the 'medium-sized' horseshoe bats. Unlike the lessers and greater, which are regularly found in buildings, they roost exclusively in caves and are, as a result, mostly present in cave-rich karst areas. Monitoring these species is not an easy task, as access to some caves often entails a long uphill battle through scrubby vegetation, followed by a few hours of caving.

Identifying each species can also be arduous as they all tend to roost together and any mistakes in their identification could potentially result in misleading information on their distributions and populations. This is particularly notable and concerning for Mehely's horseshoe bat, the rarer of the three species.

This year we received funding from EUROBATs to develop a molecular assay that would identify these three species non-invasively by analysing droppings collected inside caves.

To test the technique, VWT's Bat Conservation Officers Marina Bollo Palacios and Tom Kitching and I travelled to Romania and Serbia where we met up with our project partners to search for the precious 'black gold'. We focused our field work in the Iron Gates region. The spectacular landscape of this region, located between the Romanian and Serbian border along the river Danube, is full of gorges, cliffs and caves, making it a real hotspot for bats. Here, Szilárd Bücs from the Centre for Bat Research and Conservation in Romania, together with Ivana Budinski and Branka Pejic from Belgrade University, have been monitoring these caves for several years. They have recorded a plethora of species, including all five horseshoe bats roosting alongside tens of thousands of Schreibers' bats.

Our field work coincided with the peak of the heat wave, making some hikes quite challenging. Fortunately, we were always rewarded by the cool temperatures of the bat caves!

It was a very humbling experience to navigate through these extensive cave networks with hundreds if not thousands of horseshoe bats roosting above our heads.



Photo: ©Patrick Wright

We eventually managed to survey 18 caves this year, and the samples are now in the trusted hands of Ecotype Genetics, a specialised lab based in Sussex, which has the difficult task of developing the long awaited assay. We are hopeful that this project will give answers to some of the questions about the presence of these bats in the Balkans and help us better protect these species with our partners further down the line.



The cool caves were a respite from the heat for thousands of horseshoe bats — and for us!

Photo: ©Tom Kitching

The missing lynx?

Assessing the social feasibility of reintroducing Eurasian lynx to Scotland

Jenny MacPherson, Science and Research Programme Manager



In early 2022, VWT, working with David Bavin, concluded a study carried out on behalf of the Lynx to Scotland project, a partnership of Scotland the Big Picture and Trees for Life. The aim of the study was to assess the social feasibility of lynx reintroduction to Scotland through discussions with stakeholders and communities in two focal areas, Cairngorms National Park and Argyll. The ecological feasibility of lynx reintroduction to Britain has been assessed by previous studies but this is the first time that the social feasibility has been considered in detail. This is key for the proposed reintroduction of a large carnivore that has been absent from Britain for a long period of time. Central to our study was an investigation and analysis using Q-Methodology, a technique used to quantify the subjective views of people on a given topic. This was built upon and put into context during a process of engagement, where a large number of informal, semi-structured interviews with stakeholders were carried out over the duration of the study. We also carried out online webinar sessions with stakeholder organisations when face to face meetings were still restricted. Once

these were possible again, we held a number of community events in the Cairngorms and in Argyll.

The Q-Method investigation identified five distinct stakeholder perspectives along a spectrum of support for the return of the lynx. Two of these were strongly in favour, but for different reasons, whilst another was strongly opposed to the idea. In between, there were those that do not support lynx reintroduction at the moment but are open to further exploring the potential. The conversations that we had showed that there is a lot of divergence over stakeholders' perceptions of the potential costs and benefits of lynx reintroduction, as well as possible impacts on biodiversity and rural industries, particularly sheep farming. However, stakeholders' opinions cannot be predicted based on simplified categorisations such as 'farmer' or 'conservationist' as these fail to capture the complexity inherent in all of these, somewhat arbitrary groups. Our discussions revealed some tensions between people over their views on land and wildlife management, the reintroduction process, and trust (in sources of information as well as between some groups). However, there was sufficient support from some stakeholders and a desire amongst

others to further investigate the potential, to justify a continued exploration of feasibility.

In September, we presented our study at the Nordic Congress of Wildlife Research in Uppsala, Sweden. One of the themes of this conference was around combining ecology and social sciences to mitigate conflicts between humans about wildlife and management and included a really useful workshop on transdisciplinary research in wildlife management. It was interesting to talk to other researchers about their experience of human-carnivore conflicts in regions where lynx are just one of the several species of large carnivores present. In general, lynx were the least problematic, particularly compared to wolves. However, if lynx are ever returned to Britain, we must be cautious about extrapolating from different contexts. In illustrating people's aspirations, concerns, and some of the underlying factors affecting people's views, we hope that our study has provided a foundation for continuing constructive dialogue between stakeholders around the potential for lynx reintroduction to Britain at some time in the future.

For further information, download [The Lynx to Scotland Project](#)

An action plan and links for lesser horseshoe bats

Kate McAney, Ireland Mammal Programme Manager

Photo: ©Ruth Hanniffy



This image shows the two sides of one of the bat houses with entrances suitable for lesser horseshoe bats on one side and bee bricks to attract pollinators on another side.

This year has been significant for the lesser horseshoe bat in Ireland. The action plan for the species, which we co-authored with National Parks and Wildlife Service, was officially launched on 11 August by Minister of State for Heritage and Electoral Reform, Malcolm Noonan. It was highlighted on national and regional media platforms during that day and despite a slip of the tongue by one news reader, the message that actions are needed to conserve the species was well articulated.

We are grateful to the interest shown by George Lee, RTE's Environment Correspondent, in his coverage of the plan, and to Liam and Dolly Walsh who facilitated filming at their cottage. The first meeting of the stakeholders who will deliver these actions between now and 2026 took place in Athlone on 17 October and work has already begun on some of the actions.

Our project with Mulkear Catchment Ltd is nearing completion. The aim of this project is to provide new roosts for lesser horseshoe bats on farms within the Mulkear River Catchment that have good habitat and connectivity, such as woodland, hedgerow and tree lines, but lack suitable buildings that the bats can access. It is a European Innovation

Partnership Project and is co-funded by the Irish Government (Department of Agriculture, Food and the Marine) and the European Union (Rural Development Programme 2014-2020).

Six farmers provided a small plot of land on which they or a builder constructed the new building to our specifications. We revised our plan to build ten due to the rising costs of building materials. During the summer we placed SM4 detectors in the hedgerows adjacent to each site to record bat activity and we were equally thrilled and relieved to discover that a lesser horseshoe bat had flown within metres of the proposed location of one of the houses! The detectors will be placed inside the completed houses for ongoing monitoring. We will also monitor temperatures using digital iButton temperature loggers.

There are only 13,000 lesser horseshoe bats in Ireland, and we

estimate that there may only be 1,000-1,500 of these in County Limerick, but these bats are critical for maintaining links with the larger sub-populations in neighbouring Clare to the north and Kerry to the south.

We are extremely grateful to the six farmers who worked so hard with us to deliver these new bat houses and for the support provided by Mulkear Catchment Ltd. Now it's a case of waiting for the bats to move in!

We're also planning our first Irish Stoat Citizen Science Survey, which will be launched in mid-January 2023 and run for two years — keep an eye out for updates. The Irish stoat is a near endemic sub-species on the island of Ireland and on the Isle of Man, and the aim of the survey is to involve the public in gathering sightings so that we can establish the distribution and occurrence of the species. The National Biodiversity Data Centre in Waterford (NBDC) and the local Environmental Records Centre for Northern Ireland (CEDaR) are already on board and we are in discussions with the Manx Biological Recording Partnership (Isle of Man).



Photo: ©E Gabbett

A 'Knowledge Transfer' meeting at one of the houses with five farmers (and children), our Quantity Surveyor, our Project Accountant, one of the Board of the Mulkear Catchment Ltd and VWT's Kate McAney. December 2022. 9

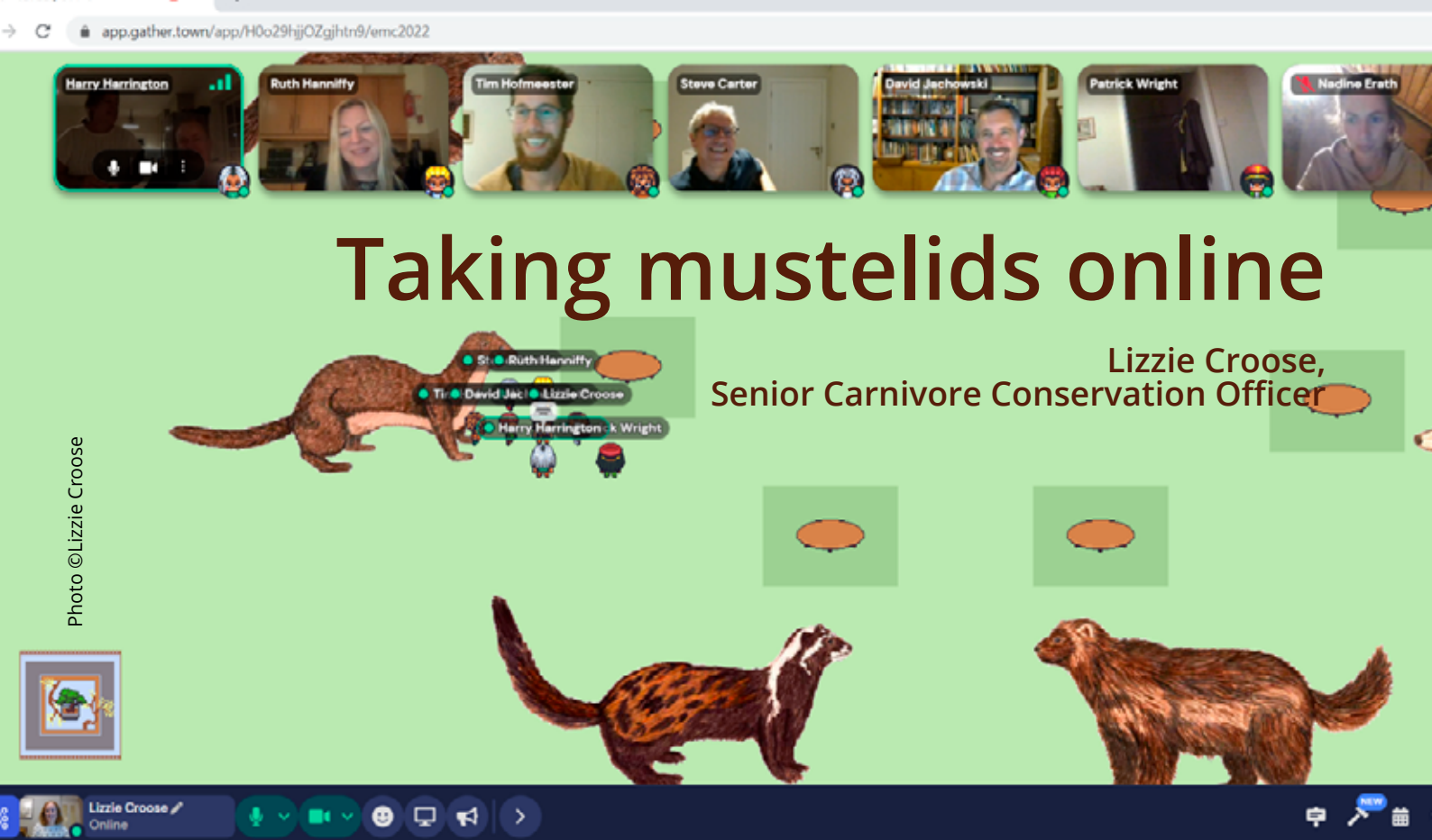


Photo ©Lizzie Croose



In September, VWT hosted the 34th European Mustelid Colloquium and for the first time, it was held online. The Colloquium is usually held in person every two years (with the previous one held in Lisbon in 2019), but due to the ongoing uncertainty surrounding COVID-19, we took the decision to host it online.

More than 100 participants from 18 different countries joined for three days of talks and posters on a wide variety of topics and mustelid species, including lesser known rarities like marbled polecat and wolverine. One advantage of holding the conference online was that we were able to be joined by speakers and participants from

across Europe and also much further afield, including New Zealand and the US.

Overall, it was a mix of people who have been attending the Colloquium for years (dubbed ‘old otters’ by one of the attendees) and others who were just joining for the first time (‘fresh ferrets’). And whilst we definitely missed having the opportunities for face-to-face networking and socialising (usually with a beer or two...), it was great to see people making the most of the online networking platform for discussions, complete with their own character emojis.

The next Colloquium will be held in person in 2024, at a location to be decided. Watch this space!

8th International Martes Symposium

In the meantime, VWT will be co-organising the 8th International Martes Symposium, along with the Martes Working Group, Forestry

and Land Scotland and Cairngorms Connect. For the first time, this will be hosted by the UK and will be held in Aviemore, Scotland, in September 2023.

Under the theme of ‘Conserving carnivores in a changing world – what future for Martes?’ we are accepting abstracts for talks and posters until 31 December 2022. Registration for the conference will be opening in the new year.

We hope you can join us!



Photo: Pine marten ©Robert Cruickshanks

Common aim to conserve the Critically Endangered European mink in Romania

Steve Carter, Carnivore Programme Manager

Photo: ©Steve Carter



Having disappeared from over 90% of its former range and suffering a catastrophic decline in population numbers, the European mink is the most threatened small carnivore in Europe. Urgent conservation efforts are now required to ensure the survival of this Critically Endangered relative of the European polecat. Following decades of sustained habitat loss and over-hunting, the main threat now is competition with the distantly-related, but invasive non-native, American mink.

Following a successful trial of non-invasive survey methods in Spain in 2019, working with other UK and Spanish partners on one of the few remaining populations of European mink ([VWT Newsletter 2021](#)), VWT has been in discussion with Fauna & Flora International (FFI), the Romanian Wilderness Society (RWS) and others to identify how we can work collaboratively to save this species from extinction. In October of this year, myself and a couple of colleagues visited what may be the last stronghold for European mink, the impressive Danube Delta Biosphere Reserve in Romania, as well as visiting potential future reintroduction sites for European mink in the Southern Carpathians.

This was an evidence-gathering and knowledge-exchange trip facilitated by FFI and RWS.

Our first port of call was the Danube Delta National Research and Development Institute (DDNI), whose team of experts, led by Dr Mihai Marinov, has been studying and monitoring the population of European mink in the Danube Delta for the past two decades. As well as visiting the prestigious Institute and meeting the Director General, Dr Marian Tudor, we were treated to a full day and a half exploring the labyrinth of channels that make up the 732,000ha wetland complex.

Particularly impressive was the scale of habitat management and restoration that is taking place to provide optimal conditions for European mink. A key question for any conservation recovery project relying on reintroductions is whether there is a viable source of founding animals in captivity and/or in the wild. We are hoping to answer the latter part of the question working closely with the DDNI and other partners.

This was followed by a visit to the Association for the Conservation of Biological Diversity (ACDB), a Romanian NGO that takes action to conserve wildlife and its habitat through education, preservation of protected areas, creating sustainable tourism and by rehabilitating and releasing injured animals. We visited their Wildlife Rehabilitation Centre and had the pleasure of spending time with

Conservation Director Dr Ioan-Mihai Pop and his highly knowledgeable team. Mihai is a renowned large carnivore expert and ACDB is a key partner on the LIFE Lynx Project, which aims to prevent the extinction of the Dinaric-SE Alpine lynx population through population reinforcement and long-term conservation measures. ACDB also has expertise in smaller carnivores, so could be an important ally in the effort to conserve European mink.

Our final leg of the journey took us to the beautiful Southern Carpathians, where we spent time getting to know the local partners from FFI and RWS better. Together we visited the watersheds of the Mureş and Olt rivers, exploring potentially good European mink habitat where some European mink may be hanging on or which could prove to be potential reintroduction sites for the species in the future. The trip was highly enjoyable and rewarding, and is now helping us to collaboratively develop a long-term recovery plan for European mink in Romania, that will also benefit the species throughout its range.



Photo: European mink ©Andrew Harrington

Ringling for the future

Marina Bollo Palacios, Bat Conservation Officer



As we wind down from the frantic summer fieldwork season, we are able to look back and reflect on what seemed to be a very good breeding year for bats, including for some of our rarest species: the barbastelle and Bechstein's bats.

Every year, from April to September, VWT's Bat Team checks the bat boxes at Tinkers Hills near Malvern and Bracketts Coppice in Dorset. Over the years, these boxes have become a crucial network of roosts for these two species, and more often than not, they house the entire breeding colonies of these woodland bats.



A juvenile (l) and an adult (r) barbastelle showing the difference in fur colour.

This summer was the sixth year studying the barbastelle colony at Tinkers Hill and we recorded barbastelle bats during all checks, which is unusual. We also found a

colony of 48 individuals, which is a record for this site. This was great news after the hard work of replacing broken boxes in 2021.

All juvenile bats have been ringed over the years with the aim of establishing a known-age population. This long-term monitoring project is still at its early stages, but in time will allow us to establish population dynamics and carry out genetic analyses to better understand the species and to help with their conservation.

In contrast, at Bracketts Coppice, the Bechstein's bats have been using the boxes since 1998. With 24 years of data, we have now been able to study their lifespan and population structure and, thanks to this long-term monitoring project, Patrick Wright was able to determine molecular methods for ageing them.

This year the colony of Bechstein's had 112 individuals, compared to 88 individuals in 2021. The main difference was the number of juveniles: 41 pups this year compared to just 18 in 2021. This is likely due to the dryer, milder spring enabling more females to successfully give birth this summer.

But how many of these juveniles will survive? How long do they live for or how likely are we to see them again? Dr Sam Ellis, research fellow at the

University of Exeter, has been helping us to answer some of these questions. From the data, Sam has worked out that when the Bechstein's are born, their life expectancy is 4.66 years. This rises to 6.13 years once they've survived their first year, which is when mortality is higher. He has also found evidence that the colony forms in July to help each other with infant care — rather than pups being left alone when their mothers leave to feed, they are left in the care of nanny females.

So far, the record age reached by a Bechstein's bat in the colony is 17 years. The bat ringed T7358 was born in 2000 and was last seen in 2017. This year the bat Y8545, born in 2005, has reached her 17th birthday! If she survives until next summer, she will be the new record for the Bracketts Coppice colony. She is still a few years from breaking the European record though: 21 years (Schober & Grimmberger, 1989) but we can hope!

Many thanks to Sam, students, staff from Dorset Wildlife Trust, and all volunteers that have been involved with these two ringing projects over the years. **See you next summer!**





All-Ireland Pine Marten Symposium

Ruth Hanniffy, Species Conservation Officer



There was no trickery involved on 1 April 2022 when, after an 18-month delay due to COVID, the 3rd All-Ireland Pine Marten Symposium was finally underway in Abbeyleix in Co. Laois, in partnership with the National Parks and Wildlife Service (NPWS) and Abbeyleix Bog Project.

Scientists, NPWS Conservation Rangers, researchers, NGOs, local groups, householders and academics came together on Friday 1 April for a hybrid event that ensured that whether attending in person or online, all were part of the discussions into advances in conservation, conflict management and research into this compelling carnivore. Martin Cullinan and his team from MyWebinar seamlessly hosted speakers from Norway, Australia and Germany and the more local Rathlin Island.

Ferdia Marnell from National Parks and Wildlife Service opened the event and introduced John Linnell who delivered a captivating keynote on 'Carnivores and coexistence from

a global perspective'. As professor at the Inland Norway University of Applied Sciences and the Norwegian Institute for Nature Research, John's research promotes coexistence between humans and lynx, wolves, leopards, and jaguars. John is also a native of Co. Cork and facilitated the conflict management workshop in 2017 that led to the development of the www.pinemarten.ie website.

Dave Tosh delivered an extensive overview of the near extirpation and slow recovery of the pine marten in Ireland followed by talks from Josh Twining, Denise O'Meara, Jon Mercer, David Bavin, Katy Bell, Cat McNicol and Johnny Birks on topics including interactions between pine martens and squirrels, genetic diversity, den boxes, reintroductions to the Forest of Dean, research in Northern Ireland and ecotourism in Scotland.

The afternoon focused on conflict management — Susann Parlow and Eva Baumgärtner — biologists from Otter Zentrum in Germany shared their research into practical methods to deter stone marten, whose semi-urban niche on the continent brings them into conflict with humans. Áine Lynch, District Conservation Officer with NPWS, presented case studies of pine martens in houses, and I shared the results of ongoing field trials of acoustic and scent-based pine marten deterrent systems.

On Saturday, Ricky Whelan set the scene for the afternoon's field trip to the Abbeyleix Bog Project, followed by an overview of the National Biodiversity Data Centre from Oisín Duffy. Wildlife Rehabilitation Ireland's Aoife McPartlin shared stories of pine marten rescue and rehabilitation, and Rebecca Synnott from South East Technological University outlined the monitoring techniques for pine martens and red squirrels that form part of her PhD research. VWT's Kate McAney brought the session to a close sharing valuable experiences in managing issues between lesser horseshoe bats and pine martens showing astonishing footage captured during emergence counts.

Chris Uys, Des Finnamore and Hugh Shepherd from [Abbeyleix Bog Project](http://AbbeyleixBogProject) led a guided field trip to this pioneering example of community intervention to manage and restore 500 acres of diverse wildlife habitats, including woodland and raised bog, and shared their experience of working with the local Men's Shed to build den boxes for pine martens on the site.

It was a privilege to share, learn and talk with dedicated individuals in Ireland, Britain and further afield and we are grateful to all who contributed. All talks are available to view at: www.bit.ly/PineMartenSymposium

Fixing the roof for the future of greater horseshoe bats

Tom Kitching, Bat Conservation Officer



Three years ago, I first laid eyes on what is now VWT's newest greater horseshoe bat reserve in 22 years. At the time, I had been invited to a secret location by Sussex Bat Group's Tony Hutson and Scotty Dodd, where I was greeted with a derelict old stable block that, despite being an impressive size and design, had definitely seen better days.

Amongst the piles of broken slates and leaves that had accumulated over 40 years of disuse, we searched the building for signs of the rare greater horseshoe bat that Scotty had, much to his surprise, found the previous summer during a routine commercial bat survey. That December in 2019, hanging between the rotten roof battens with flecks of light coming through the various cracks and gaps in the roof slates, was a lone greater horseshoe bat.

VWT and Sussex Bat Group decided to join forces to save the building, which was due to be put up for sale. We were given just six months to raise £200K to buy the old stable

before it would be put on the open market. Now, three years – and almost 100 steering group meetings – later, we are the proud owners of the first known greater horseshoe bat maternity roost in southeast England for more than 100 years.

Getting to this stage has been no small feat, and through the tireless efforts of the dozens of dedicated volunteers who have supported VWT and Sussex Bat Group this far, we have raised nearly £300K towards this project. This is a testament to the generosity of Britain's bat conservation community – a significant proportion of the project total has been raised through volunteer bat groups, and in particular our neighbouring Sussex and Surrey bat groups who have been incredibly generous with their time and resources. Sussex Bat Group has also been monitoring the site since its discovery and promisingly this summer we recorded a small breeding colony of ten adults and five pups.

Once the bats have left the building for their winter roosts, work will begin to replace the damaged roof structure with a completely new roof to improve the conditions for the bats and keep out the weather and light. It will also increase the size of the useable space for the day-roosting bats.

We expect this work to be completed before April 2023 – in time for the bats to return from their winter roosts and prepare for the birth of pups. There is still much to do, however, and this project will be ongoing for the next few years as we make staged improvements to the site. But all this hard work will be worth the effort to help ensure the return of greater horseshoe bats to southeast England.



Martens on the Move

Stephanie Johnstone, Martens on the Move Project Manager



A new era of pine marten conservation in Britain has begun. Although the species has been slowly recovering naturally in northern and central Scotland and in Ireland, reintroduction programmes were needed to help the species become re-established in Wales and England, and small-scale translocations have helped the species to inhabit southern Scotland. Breeding pine marten populations are now present again in all four nations of the UK. However, these new populations are still small and isolated and they need the support of local communities to ensure their long-term survival and range expansion across the counties.

VWT is aiming to achieve this goal through our Martens on the Move (MotM) project, which will focus on natural recovery through community action. VWT has secured funding from the National Lottery Heritage Fund to spend a year developing this project, which aims to deliver pine marten conservation across the Scottish/English border counties, the counties of the Welsh Marches and strategic areas for pine marten range expansion in mid and southern Wales. MotM aims to bring

together conservation organisations, landowners, volunteers and communities from across the three nations to work collectively to help pine martens to thrive and expand.

I joined VWT as MotM Project Manager for the Development Phase in May 2022. With a background in conservation biology and endangered species management, I have more than 20 years' experience of working with landowners, stakeholders and volunteers to achieve landscape-scale conservation outcomes. I am also being supported by a great team of people at VWT who all are working together to achieve the varied objectives of the Development Phase.

VWT is aiming to establish a long-term National Den Box Monitoring Programme and six MotM Monitoring Hubs will form its foundation. Each Monitoring Hub will contain 30-50 den boxes that will be installed across multiple landholdings and monitored annually by volunteers using trail cameras. Now over halfway through this phase, we are delighted with the positive response that we have had from organisations, landowners and communities across our Monitoring Hub areas. We have been greatly encouraged knowing that the returning pine martens will be welcomed and supported by many.

MotM also plans to work with project partners to create three Pine Marten Havens, one in each of England, Scotland and Wales. These accessible green space sites will demonstrate how land can be transformed into 'Havens' for pine martens with food

and shelter resources. In collaboration with our project partners, each site will be improved through appropriate planting to enhance and diversify the habitat to provide pine martens with native fruiting trees and a robust and diverse prey base; installing den boxes to provide pine martens with essential den sites for breeding and over-wintering; and introducing feeding stations to support the establishment of pine martens in the short term. Pine martens require diverse and resilient ecosystems to sustain their populations and our hope is that these Havens will become best practice demonstration sites for other land managers across Britain. Each Haven will also help stimulate ecotourism and inform and educate visitors about the return of this native carnivore through accessible wildlife viewing hides and interpretation trails.

During the second half of the Development Phase, we are trialling a range of activities, including working with the Peebles and District Men's Shed in the Scottish Borders to build den boxes; trialling education resources for primary and secondary schools; attending local events; giving talks; and promoting pine martens and the MotM project through social media. In May 2023, we will submit our stage two application to the National Lottery Heritage Fund, with the hope of securing Delivery Phase funding, which would result in a four-year project and further conservation success for pine martens in Britain.

Watch this space!



PhD research round up

New barbastelle colonies found

It has been a few months since I brought my fieldwork to a close, and I am now facing the rather daunting road to reach the end of my PhD. Data analysis, writing up and bringing everything together to finally submit my thesis all lie ahead of me. However, whatever happens

going forward, I feel that this PhD already has some cause for celebration. The main focus of my PhD has been to develop a novel methodology to locate barbastelle colonies, which



Kieran O'Malley

I first started work on back in 2019. The methodology focuses on the idea that the level of barbastelle activity recorded around sunset, which is established using acoustic bat detectors, could provide evidence that a colony is locally present. This methodology was subsequently used by VWT volunteers across the country to survey woodlands. This was a huge success, with nearly 80 woodlands being surveyed and with the results indicating the presence of nearby barbastelle colonies.

This year, we re-visited some of these woodlands in order to validate what the acoustic data was telling us regarding the presence (or absence) of colonies. We surveyed 17 woodlands using mist nets and harp traps to catch barbastelle bats, attach tags to them, and radio-track them back to their roost site. Once we located the roost tree, we set

up infra-red cameras and filmed their emergence, which would allow us to get an accurate count of the roost size. A total of 34 barbastelles were caught across all the sites, 13 of which were suitable for attaching radio tags. This led to the discovery of five new barbastelle colonies, at least one of which being the largest colony in its respective county! The discovery of these new colonies was the last stage in my PhD, but not for my work. The methodology will be used in the future by VWT in the collaborative project Natur am Byth! to help better understand the distribution of barbastelles in Wales. The project will continue working with volunteers to identify important areas for woodland management, so that these habitats can be improved for barbastelles, as well as other woodland species.

Wildcats in Wales

Another 12 months have gone by and my PhD is nearing its end. This year has been spent tying up research and settling down to the analysis and writing up in preparation for submission in the first half of 2023. With my PhD being split into the social and ecological elements of a wildcat reintroduction, it allows me to focus on a range of subjects, literature, and analysis techniques – which I'm very grateful for. It keeps the work feeling fresh, and allows me to move between topics and maintain momentum. While I have been largely desk-bound in the past 12 months, two field occasions do spring to mind. The first was back in May when I played the role of tour guide and took the rest

of the wildcat partnership around our candidate landscape in Wales. For the project, it was a big step as we start to visualise where this might take place and the challenges and opportunities that involves. For me, it was also a chance to reflect on my work over these past three years.

The landscape is one I identified through modelling work for the opening chapter of my thesis as having potential for wildcats due to the availability of habitat and its connectedness to the wider landscape.

Subsequently, most of my research has followed suit. I spent much of summer 2021 conducting camera trap surveys there, which are now being analysed to understand both the presence and space use of feral and domestic cats and also that of their competitive mesocarnivores, and to ascertain how these relationships might affect issues such as hybridisation risk. It is also a landscape I have come to know on a social level. Two social science chapters have explored the perspectives of key stakeholders – farmers, gamekeepers and cat owners – on the wildcat, and also wider, big-picture issues that help explain and identify challenges. For farmers, this is through the exploration of their relationship and interactions with conservation and their landscape. While for cat owners, who are potentially natural allies, it is important to understand issues around cat management and ownership practices. Alongside the welfare and rescue groups, owners



Tom Dando

will be important partners in ensuring we reduce the risk of hybridisation. Both these chapters are designed to help us frame the project and consultation work, ensuring it works for all parties and that any concerns can be effectively mitigated.

The second trip was to Crete for this year's EUROwildcat workshop. This was enjoyable but also invaluable for me to get the chance to speak with experts from around Europe, listen to the latest research findings and introduce our project and get feedback. Furthermore, the chance to go out and see the habitat in the mountains of Crete was useful in relating to wildcats back home. The discussions and information from that trip have stimulated a lot more research ideas, which I'll have to sit on while I finish up my PhD. Crucially, they help in the development of a release strategy, as the project continues to build a picture of the design and feasibility of reintroducing wildcats to Wales.

Analysing factors of pine marten expansion

As I approach the last six months of my PhD, I am busily working away finishing the analysis for my research on pine marten expansion. As many of you will know, the pine marten population in the UK suffered severe declines in the 18th and 19th centuries with the majority of the remaining population restricted to the northwest of Scotland by the early-20th century. The pine marten population has since expanded to many parts of Scotland, with more recent records in northern England – however, the recovery overall has been very slow. This chapter of my PhD aims to identify the habitat and land use factors that have influenced the range expansion of pine marten across Scotland and northern England over the past nine years. Through this research, I hope to determine which factors have promoted or hindered colonisation of new areas by pine marten. I am looking at a range of different factors that represent the landscape of the study area, including habitat, urban/suburban area, roads and management for gamebirds (eg,



Keziah Hobson

pheasant pens and moorland burn). To have good spatial coverage of Scotland and northern England, I have combined data collected during several different field surveys. This includes data from my feeder survey collected during my PhD with the help of many wonderful volunteers in Aberdeenshire, the Trossachs and the Borders. Saving Scotland's Red Squirrels (SSRS), Red Squirrel's Northern England (RSNE) and several researchers have very kindly allowed me to use the data collected through their surveys, many of which would not have been possible without a huge number of volunteers over the years. Many thanks to all those involved! I hope to be able to share the results from this analysis soon!

Tagging bats

I can't believe the first year of my PhD is over, and what an exciting year it has been. The aim of my project is to develop a new method of radio tracking bats. This method uses a network of static receivers that automatically log our tagged bats as they fly around. The network is made up of two types of receivers, sensor stations and nodes. The sensor stations use four directional antennas and one omnidirectional antenna to detect the radio tags that we put on our bats. The nodes are essentially mini-sensor stations, each having only one omnidirectional antenna and are powered using a solar panel. The sensor stations can detect tags at a further distance than the nodes, but require much more equipment, power and space to run.

During the spring and summer months, I was mainly based at the University of Sussex campus, carrying out experiments to find out how far a tagged bat could fly and still be detected, and to assess whether the strength of the radio tag signal was a

reliable indicator of distance. From these experiments, and hours of walking and drone flying, I was able to determine that the sensor stations can accurately estimate the distance of a tagged bat up to 1km, but can often detect at much further distances. The nodes can detect a bat up to 300m. Over the past two months I have begun field trials in Devon. I have set up 18 nodes at known or potential greater horseshoe winter roosting sites, which are being used to log the passing of our tagged bats as they enter and exit the roost. Most have also been paired with acoustic monitors, so we will know if greater

horseshoe bats are present even if not our tagged individuals. With many helping hands, I have also set up 11 sensor stations around the Chudleigh Caves SSSI, covering an area of around 60km². By the end of November, I am hoping to set up one more station, but finding a suitable location is proving difficult. One of the challenges of Devon is that it is hilly and signals are often blocked by the hills, so we need to find places for the radiotracking masts that give us the best possible coverage. So far, 13 greater horseshoe bats have been tagged at Chudleigh caves this autumn, but we are hoping to tag a few more during the winter months. Very little is known about where bats go to feed in the winter, how often or long they leave the roost, or how they move between roosts. I am hoping to inform some of these gaps in our knowledge using this static radiotracking system. I am really pleased with how things are going so far, and I am looking forward to having some results to share from these field trials. There have been many practical challenges to overcome, but I am excited to see what this new technology can uncover about bat movement and how it can be used on a wider scale in the future. Thank you to everyone who has either hosted one of our sensor stations; helped set up equipment; or allowed us access to their land to set up equipment. This project would not be possible without this help and support.



Katie Allan



Barbastelles being championed through Natur am Byth!

Daniel Hargreaves, Bat Programme Manager



The barbastelle bat is a secretive animal, so it was no surprise when we quizzed people at the Pembrokeshire County show, that only four out of the 205 people asked had heard of the barbastelle. Those that had were ecologists or keen naturalists and even then, they knew little of this bat's behaviour.



Likened to a stealth fighter jet, the barbastelle flies under the radar of both people and the prey it hunts — moths. This specialist bat has in turn evolved to outwit the moths that have developed 'ears' to hear and outwit the bats. In this evolutionary

race to top trump their predators, moths have developed a range of tactics to avoid becoming prey for bats, including developing ears to hear bats, producing clicks to confuse bat's sonar and covering their bodies in sound-dampening camouflage — but the barbastelle is fighting back. It has created a superpower of its own in the form of stealth echolocation, where it can reduce the intensity of its calls to more than 10 times quieter than those of other bats that hunt insects in the same way, allowing barbastelles to approach a moth undetected. And by the time the bat needs to increase the volume in order to catch the moth, it is likely to be too late for the moth to take evasive action and escape.

Luckily for us, these calls are very distinctive and allow researchers to quickly identify the species from their sonograms. Pembrokeshire is home to the only known barbastelle maternity colonies in Wales. The local bat group and other ecologists have discovered a few roosts in the north and south of the county but these colonies appear isolated in this county. The barbastelle's favoured habitat is old-growth forests with

lots of oak and beech trees. They prefer to roost under flaking bark, cracks and hazard beams, which are often associated with older trees that have been damaged or left to decay. Modern forestry practices look to remove these trees due to health and safety concerns and lack of commercial value, which means fewer suitable roost sites for this woodland specialist.

The Natur am Byth! partnership is the flagship Green Recovery project in Wales. It unites nine environmental charities with Natural Resources Wales (NRW) to deliver the country's most significant natural heritage and outreach programme that aims to save species from extinction and to reconnect people to nature.

VWT is championing the barbastelle and will be working with volunteers to help with surveys, roost creation and habitat management. As we approach the end of the development phase, we are preparing our final project plan, gaining key landowner permissions, and signing up project partners to help make a difference for the barbastelle in Pembrokeshire.

8th International Martes Symposium

12-15 September 2023
Aviemore, Scotland



Conserving carnivores in a changing world: what future for Martes?

VWT is delighted to be working with the **Martes Working Group**, **Forestry and Land Scotland**, and **Cairngorms Connect** to organise the **8th International Martes Symposium**.

The symposium will be held 12-15 September 2023 in Aviemore, Scotland; the first time it has been hosted in the UK.

Usually held once every four to five years, the symposium brings together researchers, land managers and conservationists from all over the world to share research and discuss common issues on species in the 'Martes Complex' (marten, fisher, tayra and wolverine).

We are currently accepting abstracts for talks and posters until 31 December, and registration will be opening in the new year.
For more information, visit the symposium website www.martesworkinggroup.org/

We hope you can join us!



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