Bat Conservation Trust

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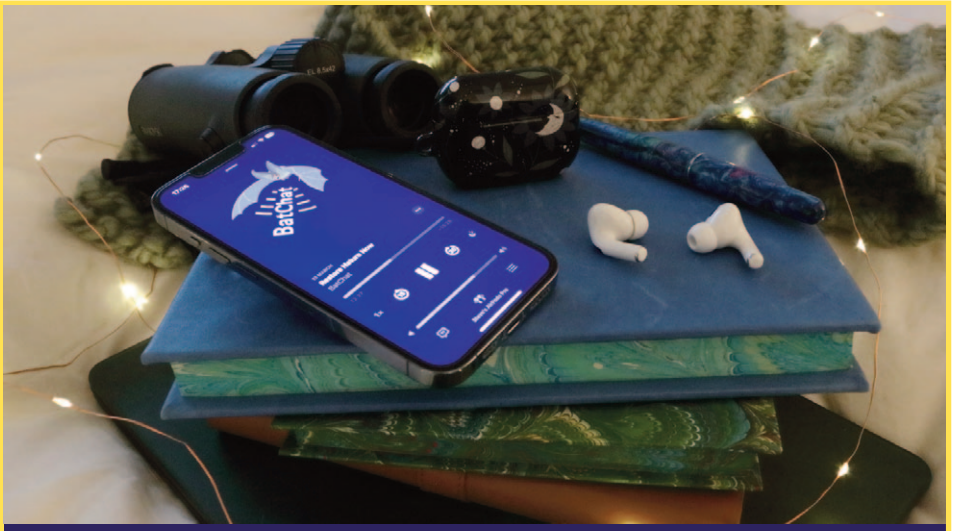
Bat News

Claire Boothby, a much-loved conservationist

Beavers and bats: friends or foes?

British Bat Survey – new way of monitoring



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BatChat is Bat Conservation Trust's award-winning podcast

It is produced and presented by Steve Roe, BCT and Derbyshire Bat Group trustee, who has been part of the bat conservation community since childhood. Steve talks to lots of different people to bring you stories from across the bat conservation movement.

Available in your usual podcast app.

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Spring 2025

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Welcome

From Kit Stoner, Chief Executive


© BCT

I want to start by paying tribute to Claire Boothby, a much loved colleague, who sadly lost her life to cancer in January. Claire joined our team in 2018, firstly as the Bats in Churches Training and Survey Officer, and then we were delighted that she was able to stay at BCT as Head of Conservation Projects. Claire was a joy to work with, and in her time at BCT she had many achievements on projects such as Bats in Churches, Species on the Edge and Natur am Byth, as well as being a valued and supportive colleague. We miss her greatly. You can read more about Claire on page 22.

Part of Claire's work on the Bats and Churches project was to lead a citizen science programme, and she engaged with and supported hundreds of volunteers to survey their local churches. So much of our work relies on volunteers and you can read about the launch of a new citizen science survey on page 28. The British Bat Survey (BBatS) is a new addition to the National Bat Monitoring Programme (NBMP), which uses passive acoustic monitoring, and we hope it will help us to provide population trends for species not currently covered by the NBMP.

Information from the NBMP is crucial for us to understand how our bat populations are faring. As you will know our bat species are protected because of large historical declines. However, new planning proposals pose a threat to bat protection. You can read more about our concerns and what we have been doing so far on page 20. The Planning and Infrastructure Bill has now had had its second reading and we will need your help to influence MPs as this bill moves through the House of Commons. Please do join our campaign mailing list so we can keep you updated on what you can do to help: http://eepurl.com/gGqJDH

Some of you may remember that in the last issue of Bat News we had an article on rewilding at Knepp Estate. In this issue we find out more about a flagship species for rewilding - beavers (page 10). A new study has revealed that the reintroduction of beavers can restore lost ecological connections and increase biodiversity by creating wetlands that support increased bat activity.

You can also read about how noctules use wind support and storms to help them with their migration across Europe (page 18) and discover more about Bats without Borders (BwB), an organisation dedicated to conserving bats, biodiversity and healthy ecosystems in southern Africa (page 26).

And finally, one of the many things that I love about bats is that there is always something new to learn, and this issue is no exception! Scientists have discovered that Mexican free-tailed bats have hairs on their toes that turn bright blue when exposed to UV light! Since this was discovered, other bat workers have found that these photoluminescent bristles are present in every member of the Molossidae family checked to date, ranging from the United States to South Africa (page 14).

Kit Stoner Chief Executive

The greater mouse-eared bat is our rarest native mammal species. For many years, only one male individual was known to live in a cave in Sussex. However, earlier this year, not one but two individuals were discovered. One of them was a female (in the photo) so it seems there is hope for our rarest UK bat.

SPOTLIGHT on bat groups

Bat groups, made up of many dedicated volunteers, are the mainstay of bat conservation in the UK, undertaking vital front-line conservation work.

Amazing finds at hibernation surveys

*By **Abby Packham***

Alcathoe bat spotted in hidden crevice during hibernation survey

© Daniel Hargreaves

Bat group activity can get a little quieter over winter, whilst the bats are hibernating, turning instead to talks and training. However, there are still one or two chances to get out with bats. Hibernation surveys are one of the main winter activities for many bat groups. Often being conducted as part of the National Bat Monitoring Programme (NBMP), these surveys require licensed individuals to lead them due to the sensitive nature of bats during hibernation. The data gathered feeds into NBMP trends to monitor how 11 of our 18 UK species are faring. Hibernation surveys are a fantastic opportunity to see bats in a different way, whilst they are stationary, to be able to appreciate the details of their appearance and practice your ID skills. However, to keep any disturbance to a minimum, participation numbers are restricted depending on the site.

If you take part in a hibernation survey, not only are you helping gather essential data to monitor populations, you could also make an exciting new find! This was the case for hibernation surveys undertaken by the Sussex and Kent bat groups this winter. Both finding a greater mouse-eared bat – Britain's rarest species.

Claire Munn and members of the Kent Bat Group were conducting hibernation surveys in Dover. Claire says "I was leading a team of fellow volunteers for our regular hibernation surveys. We were gobsmacked to find a very large bat, which looked somewhat like a Natterer's that had overdone it at the gym and taken too many steroids! ID books at the ready, we surmised it was probably a greater mouse-eared bat. We have since had that confirmed." This is the first record of this species in Kent for 40 years.

The Sussex Bat Group had previously found the second known individual of this species in the UK in 2023, so had eagerly been looking out during their hibernation surveys since. Finding neither known individuals in the 2024 winter surveys, who knew what the winter 2025 surveys were going to hold. Eagle-eyed volunteers were rewarded, however, with finding a female greater mouse-eared! Daniel Whitby explained: "Having surveyed this area persistently since the first discovery of a greater mouse-eared in 2002, the finding of a female is rewarding and a remarkable discovery which brings huge hope for this species."

These finds are important for the groups and the species, and go to show the ground-breaking work carried out by volunteers through their local bat groups.

Monitoring Local Wildlife Sites

*By **Stan Irwin, Merseyside & West Lancs Bat Group***

In North Merseyside, local wildlife sites (LWS) are designated using guidelines based on the wildlife present. However, bats have traditionally received very little attention because of insufficient recording. Now, Merseyside and West Lancashire Bat Group (MWLBG) has organised a five-year project to find out exactly how bats are using these sites - so these mammals can be included in the guidance.

Carr Mill Dam

Only a limited number of volunteers can commit to regular bat surveys, therefore survey sites have focused on areas with landowner consent, access, suitable terrain and availability of repeatable survey methods. Following site selection, teams were allocated to a specific site following which a daytime visit was conducted to familiarise themselves with the terrain and configure the survey route bearing in mind any limitations or hazards. The objectives of the surveys were to record bat activity and identify species present using a walked transect methodology, including pauses at previously identified 'stopping points' to record the number of 'bat passes'. This also means the results can be compared to national trends gathered by the long running National Bat Monitoring Programme. Echolocation calls recorded on these surveys were analysed using SonoBat software that was partially funded by a grant from BCT's Partner Group Support Fund.

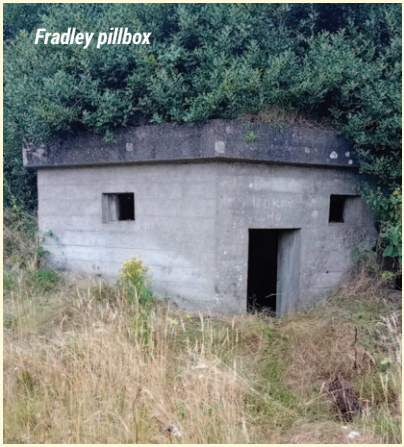
The monitoring is now entering its third year involving five sites with teams of four, with two surveys undertaken per year. So far, the results have produced some valuable information, including the presence of Nathusius' pipistrelle and Natterer's bat, both previously unrecorded at their given sites. Equally important was the high numbers of soprano pipistrelle at a lakeland habitat.

Considering the large number of LWS in the region, it would be impractical to manually monitor each; so MWLBG are considering alternatives to dusk surveys when formulating criteria in the site selection guidance for potential new LWS and updating information at current sites. These include static detector monitoring, assessing habitat in relation to bats, considering known and potential roost locations and their connectivity and considering species already known to be present or suspected based on surrounding data.

Lunt Meadows

Converting the Fradley pillboxes for bats

*By **Chris Smith, Staffordshire Bat Group***


Fradley pillbox

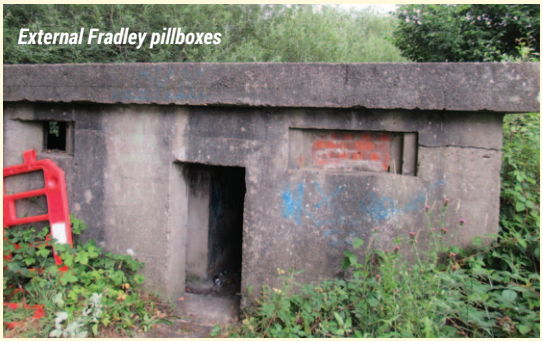
© Chris Smith

The Staffordshire Bat Group (SBG) was approached by Fradley Parish Council to look at whether there could be alternative uses for pillboxes to support bats. Fradley was an airfield used for aircraft storage in the Second World War. To defend the airfield from attack, a number of pillboxes and defendable military buildings were built. The council was offered the bulidings by a housing developer to support bats by converting them into roosting opportunities.

SBG has been involved with the conversion and monitoring of pillboxes in the past, resulting in a BBC Countryfile programme showcasing the use of pillboxes by bats in their Remembrance Day episode. On a visit to the Fradley site, I was taken to a pillbox on the side of the Coventry Canal. The concrete building was overgrown but clearly faced onto the canal, promising for bats! It is built with a thick roof and two rooms. The plan is to put a door on the pillbox to stop public access and then close the gun embrasures so that only a slot is left that bats can use as access. Bats use very small gaps so a gap of 200mm long by 50mm tall is large enough for all bat species. Enclosing the pillbox and creating a single access point will create different temperatures within the building which will provide more choice for bats. Within the building, the concrete walls have few features that bats could use to hang from, so improvements will be made to create more variety, such as fixing timber batons to the roof or walls and hanging hessian sacking.

I was also shown a small partially buried brick room with a concrete roof cast over corrugated iron sheets, which was probably used as an air raid shelter by the staff of the airfield. Partially buried structures like this offer opportunities for hibernating bats due to the ground insulating the building and providing a cooler, more stable internal temperature.

With the help of Staffordshire Bat Group, the parish council is looking at converting a number of structures in areas where bats are known to forage and commute, such as along the canal. This will create a series of linked opportunities for both summer and winter roosting, which could improve biodiversity across the area.


External Fradley pillboxes

© Chris Smith

The Vale Serotine Project

*By **Jess Dangerfield***

The serotine is one of the UK's larger bat species. It has a wide-ranging global distribution but is confined to the southern half of Britain and has recently been recognised as vulnerable to extinction in England and Wales. The species is also considered data deficient with regards to many aspects of its ecology. Currently, estimates for core sustenance zones are based on a single study of 13 individual bats.

In Wales, only three maternity sites for this species are known, one of which occurs in the Vale of Glamorgan. The Vale of Glamorgan and Bridgend Bat Group have been monitoring this roost as part of the National Bat Monitoring Programme for the last decade. Over this period, we have watched the numbers gradually increase from around ten individuals to almost 70 bats in June 2023. Counts in 2024 found that numbers suddenly took a nose dive, with only around 20 bats counted. However, in September 2023, a new roost was discovered thanks to a bat care call on the outskirts of Cardiff.

Having roosts of such significant conservation value on our doorstep, it was decided that we needed to undertake further research over and above our yearly roost counts. Further research is needed not only to better understand serotine ecology generally, but also to understand the habitats and areas used for these roosts specifically. This is of particular importance, given the locations of these roosts on the outskirts of Cardiff and within Vale of Glamorgan County, areas threatened with encroaching large-scale developments.

In 2024, we successfully secured a licence and funding for a radio tracking project. Over two weeks, we delivered four workshops to train up 17 volunteers. In September, we tagged our first bat of the project: a young male. Nicknamed Otis by volunteers, Otis the bat foraged for approximately 1h 28m each evening emerging on average 16 minutes after sunset. He travelled approximately 2.4km from the roost to the same foraging site each night. We are excited to continue in 2025 and see what further insights we can learn.

Thank you to South East Wales Biodiversity Records Centre and funding made available by Welsh Government via the Vale Nature Partnership for this project. A big thank you to Mike Shewring, Sam Dyer, Richard Crompton, Natural Resources Wales and all the volunteers for their help in making this project happen.

Ariennir gan **Lywodraeth Cymru**
Funded by **Welsh Government**

Partneriaeth Natur Fro
Vale Nature Partnership

Beavers are back: boosting the environment and helping bats

By **Jack Hooker**, Research Scientist at BCT

A new study has revealed that the reintroduction of beavers can restore lost ecological connections and biodiversity by creating wetlands that support increased bat activity. Our recently published research highlights the crucial role beavers play in reshaping their environement and providing vital habitats for a range of species.

Beavers as ecosystem engineers

Unfortunately, it is an unavoidable fact that ecosystems across the globe are in trouble, and as human populations continue to grow, these environmental challenges are poised to escalate. One of the habitats particularly at risk are wetlands.

© Ben Morris

Wetlands are recognised as crucial components of functionally connected landscapes and face increasing human-made pressures that modify or replace entire habitats. It is estimated that the long-term loss of natural wetlands over the last century averages between 54% and 57%, reaching up to 90% in some regions.

Yet, despite their global and regional significance, the laws that protect wetlands have proven insufficient in mitigating pressures on these habitats. Nowhere is this more evident than the UK, which has suffered some of the worst declines in the quality and extent of wetlands in Europe.

Along with worsening climate impacts, decades of poor management and lack of corporate responsibility (including chronic underinvestment) have allowed wetland networks in many parts of the UK to become either open sewers, boxed into hard infrastructure, or their sources diverted or extracted for human use.

Beavers have long been recognised as nature's engineers. By building dams and modifying waterways, they create and maintain wetland ecosystems that support a wide variety of plant and animal life. Their ability to alter landscapes makes them a keystone species, meaning their presence has a disproportionate impact on ecosystem function. The benefits of beaver reintroduction extend far beyond just the wetlands they create; they help support entire food chains, regulate water resources, and improve biodiversity.

Historically, beavers were widespread across Europe, but centuries of hunting and habitat destruction led to severe population declines. In Great Britain, European beavers *(Castor fiber)* were hunted to extinction some 400 years ago. The loss of beavers was a disastrous event in our country's history.

With it, we also lost our knowledge of what beaver-inhabited freshwater habitats were like and how they interacted with other species.

However, conservationists have been working to reintroduce these industrious rodents into their former ranges, with some positive results

How beavers help bats thrive

The study compared bat activity in areas with active beaver populations to areas without beavers. Researchers found that bat activity was significantly higher in beaver-created wetlands. But why?

Beaver activity leads to the formation of ponds and slow-moving water bodies that attract a wealth of insects, which are the primary food source for bats. This change in invertebrate communities may be particularly important for bat species that favour certain prey species; for example, barbastelle and both species of long-eared bats are moth predators and wetlands with beavers have been shown to harbour significantly higher moth diversity. These wetlands also create open spaces where certain bat species can hunt more efficiently. Additionally, standing dead trees resulting from beaver damming may provide important roosting sites for some bat species.

Using passive acoustic monitoring technology, scientists recorded bat calls to assess species diversity and activity levels. They found that beaver-modified landscapes supported more bat activity across a range of bat species that have different foraging strategies, habitat and prey preferences. This suggests the positive impacts of beavers on a landscape represent a dynamic and multifaceted solution to restore degraded wetland ecosystems.

Bats are crucial players in ecosystems; they eat large amounts of insects every night and so act as a natural controller of agricultural pests and mosquitoes. By supporting bat populations, beaver-created wetlands indirectly benefit human populations by reducing the need for chemical pesticides and promoting healthier ecosystems.

Broader ecological benefits

Beyond their positive impact on bats, beavers provide numerous other ecological benefits. Their dams help regulate water flow, reducing the risk of floods and droughts and in times of heavy rainfall, beaver dams

The hourglass shaped gnaw marks of this felled Goat Willow are a classic sign that beavers are hard at work engineering the local habitat at this nature reserve in Dorset

A large expanse of open water created by the reintroduced beavers in Cropton Forest, Yorkshire

slow water runoff, preventing erosion and downstream flooding. Conversely, during dry seasons, these wetlands act as reservoirs, helping to maintain water availability for plants, animals and human use.

Wetlands create habitats for amphibians, fish, birds and other mammals. Many species that are declining due to habitat loss find refuge in the complex environments beavers create. For example, fish populations benefit from the deeper, cooler waters of beaver ponds, which provide better breeding and feeding conditions.

Their presence can transform degraded landscapes into thriving ecosystems, making them a valuable tool in conservation and climate resilience efforts. Studies have shown that beaver wetlands can sequester carbon, mitigating the impacts of climate change, and their dams trap organic material, preventing carbon from being released into the atmosphere and thus reducing greenhouse gas emissions.

Challenges and considerations

Despite their many benefits, beaver reintroduction is not without challenges and in some areas landowners and farmers express concerns about flooding caused by beaver dams, which can impact agricultural land and infrastructure. However, effective management strategies, such as installing flow devices in beaver dams to regulate water levels, can help mitigate these issues. Flow devices allow excess water to drain from beaver ponds, preventing excessive flooding while still maintaining the ecological benefits of the wetlands. Also, fencing around valuable trees and using non-lethal deterrents can help balance the needs of landowners with conservation goals.

Public education is also crucial in promoting coexistence between humans and beavers. As awareness grows about the benefits of beaver reintroduction, more communities are embracing efforts to restore this vital species to their local environments. Some conservation

programmes work directly with landowners to implement solutions that allow beavers and humans to coexist without conflict.

The future of beaver reintroduction

The findings of this study make a strong case for the continued reintroduction of beavers into their historical habitats. Their ability to create and maintain wetlands not only supports bat populations but also provides a wide range of ecological and environmental benefits.

In fact, the success of other beaver reintroduction programmes in various parts of the country has encouraged conservationists to expand their efforts. NGOs such as the Wildlife Trusts and National Trust, as well as private landowners, are embracing beavers on their land and have demonstrated how beaver populations can recover and contribute to ecosystem restoration.

To ensure the long-term success of beaver reintroductions, it is vital that governments, scientists, conservationists and local communities work together to find solutions that benefit both people and wildlife.

By fostering cooperation and understanding, we can ensure that beaver reintroduction continues to benefit ecosystems and biodiversity. Governments and conservation organisations should invest in further research to refine best practices for beaver reintroductions, ensuring that their benefits are maximised while minimising potential conflicts. Funding for research, habitat restoration and education programmes will be essential in helping beaver populations thrive and continue their critical role in ecosystem restoration.

With continued conservation efforts, beavers can once again become widespread in their historical ranges, contributing to healthier and more sustainable landscapes.

As climate change and habitat destruction continue to threaten biodiversity worldwide, the role of keystone species like beavers in restoring ecosystems is becoming more important than ever. They provide natural solutions to some of the most pressing environmental challenges we face today. By supporting these efforts, we can take a step toward a more resilient and biodiverse future.

© Jack Hooker

The main dam holding back the water of the main beaver pond seen in the photo on the previous page

The original paper was published in *Science of The Total Environment* (2024). 'Re-establishing historic ecosystem links through targeted species reintroduction: Beaver-mediated wetlands support increased bat activity'.

FEATURE

Glowing bat toes

By **Fernando Gual-Suárez,** researcher at
National Autonomous University of Mexico

'Is that normal or…?'
We huddled together at the mist net to see what my friend was pointing at. There was no trace of the orange UV-fluorescent pigment we were looking for on the bat.
'No, no, on its feet!'
Upon closer inspection, the UV-light revealed two pairs of bright blue lines against the dull grey of the rest of the Mexican free-tailed bat I was holding. Its feet were glowing!
'I… don't know.'

Unexpected discovery

At the tail-end of the pandemic lockdowns in Mexico we had the opportunity to try to establish a roost of free Mexican free-tailed bats *(Tadarida brasiliensis)*, a very abundant urban dweller, in Chapultepec Zoo, in the heart of Mexico City. We captured bats from a known roost nearby and released them into their warm new home in the zoo, hoping they would like it enough to stay.

To see if any of them went back to their original roost within 24 hours, we coated them in an orange, non-toxic UV-fluorescent powder. This way, we would be able to look out for fluorescent bats and droppings the next night, at the original roost. We never found any traces of the powder – and the new roost ended up being colonised by another species – but we did learn something new about these bats.

Common does not equal unremarkable

The Mexican free-tailed bat is one of the most abundant bat species in North America, and several maternity colonies of this species in northern Mexico and southern US are millions of individuals strong.

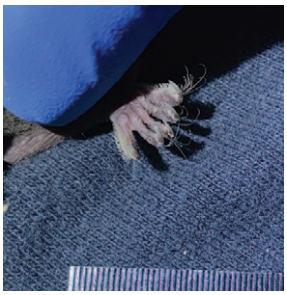
It is a long-haul migrating species and holds the record for the fastest self-propelled flight known in nature (160km/h). They also save humans millions of dollars in the form of pest control by eating a species of moth that attacks maize, cotton and many other important crops.

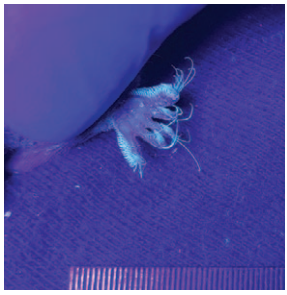
An often-overlooked characteristic of this bat and its cousins *(Molossidae)* is a line of short bristle-like hairs that grows along their toes on both sides of the feet and, as we had just learned, these hairs turn bright blue when exposed to UV light.

After making sure this glow was not due to contamination in the site and taking photographs, we scoured the literature to check if anyone else had observed photoluminescence in these bats. We found nothing and decided to publish our findings.

Light on their feet

Several online media soon picked up the news, and our pictures were suddenly being shared with captions in many languages; apparently, people really like fuzzy glowing bat feet!





Bat workers then started looking at their own bats under UV light and, it turns out, these photoluminescent bristles are present in basically every molossid bat checked to date, from the US to South Africa.

However, we still have no idea what bats might be using them for, if at all. The literature is sparce in references to these hairy feet, mainly suggesting that they might be used for grooming (as a brush) or help bats perceive the space around them better, like whiskers.

On the photoluminescence, we have proposed some theories: assuming there is enough UV light in the night environment, they could be used for communication within the bats' roosts or to see each other during flight. Or, they could simply be a non-functional byproduct of the hairs' structure: sheep's wool, collagen, bone, teeth, nails and many other parts of animals are UV-photoluminescent, likely without any function. We currently don't know.

Workplace blindness

When presenting this work at a conference last year, I had the opportunity to talk to one of the world's top experts in Mexican free-tailed bats, who has dedicated much of his career to this amazing species. He said (paraphrasing) "I have been using UV-fluorescent powders and UV lights with these bats from decades, and I had never noticed this. I learned something new about this bat today".

I had been looking at the bats under UV light for the entire night and I, too, had been so focused on looking for the orange powder that I failed to see what the light was revealing. And, to be honest, so did every other biologist on the team that night. Who noticed? The only non-biologist there, a computer scientist friend who jumped at the opportunity to be outdoors after the pandemic.

I have been thinking about this a lot lately. As researchers, we are often incentivised to focus intensely and be efficient: there are grants to write, deadlines to meet, data awaiting processing, and fieldwork to plan, and it sometimes leads to falling into a routine or even burnout. It took a fresh pair of eyes from someone who doesn't work with bats to remind me that a) I have an amazing job and b) there are always surprises waiting in the natural world for those who take the time to really look.

The original paper was published in *Mammalian Biology* (2024). 'Ultraviolet-induced photoluminscent bristles on the feet of the Mexican free-tailed bat'.

Photos © Fernando Gual-Suárez

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www.bats.org.uk/sunset-survey

Surfing the wind: noctules use storm fronts during migration

By **Edward Hurme,** researcher at Max Planck Institute of Animal Behavior

Field work has taken me travelling to desert islands in Mexico and exploring central African cities to study how bats explore the world around them. But my most recent research has kept me in Europe, studying bat migration.

A typical day involves strolling through a nearby park on Lake Konstanz, passing manicured lawns as we check bat boxes hung from the trees. Balancing on the ladder as we pry the heavy doors off the boxes always gets my heart racing, especially when a nesting great tit bursts out of the box just past my face.

We were looking for common noctules, a relatively large European bat that had just woken up from hibernation. These bats will quickly put on fat when they wake up, but in early spring, as temperatures are cooler, they are still sluggish enough to be caught as they emerge from torpor.

Escaping the cold

These bats are adapted to roost in tree holes, but concrete bat boxes and buildings often work as a useful substitute. Because trees are not as well insulated as caves, these bats must migrate to find the right conditions for winter.

Lake Konstanz, situated just north of the Alps, appears to be an important hibernation site for this species each winter, as the lake keeps temperatures hovering around 0ºC for several months. Then in April, as bats emerge from hibernation, females will fly north east to give birth, while males stick around to spend the summer alone and wait for females to return in the fall.

Edward Hurme and colleagues set up mist nets for bat capture

© Christian Ziegler-MPI-AB

In some regions further north, some females don't migrate at all. Instead, they find often human-made roosts that have stable temperatures all winter.

Noctule females appear to be like sea turtles; they often return to the same maternity roosts they were born in, year after year, to give birth to their own pups.

Yet, despite decades of monitoring bats, our current mark-recapture methods only find a small fraction of individuals. Additionally, only the potential start and end points are recorded; we still have no idea where this bat has been between marking and recapturing, when it got here or how.

Where are all the bats?

We lack a broad understanding of when and how bats migrate. Bats are small and fast, so keeping track of an individual, traveling hundreds of kilometres per night, has been almost impossible.

My team at the Max Planck Institute of Animal Behavior literally piloted some of the first migration tracks of these bats by following individuals by plane. We used radio telemetry tags to be able to locate a handful of individuals, but it was hard work. We needed a tag that could send the data remotely.

In 2022, we finally managed to track the nightly flights of bats during their migrations for several weeks! We used a new miniature device, called a biologger, that sent all the data remotely.

It was a thrill to see these bats taking the same routes we had seen used by the bats we tracked by plane. More excitedly, some were flying in surprising directions such as east along the Alps or north along the Rhine valley.

Over the past three years, we could see the bats bursting across our screen, fanning out across central Europe each spring, like fireworks.

Common noctule flies with ICARUS TinyFoxBatt tag

Surfer bats

When we looked at the weather on those high migration nights, we found that these were typically nights before storms. Bats appeared to be surfing the wind from an approaching warm front that was blowing east across Europe.

Typically, they would just ride this wave for a single night and the storm would pass them during the day. However, some bats would get a second night of beneficial winds before waiting several days or weeks for the next push.

This was the first direct evidence that bats are relying on wind support and storms during migration. With over 70 individual bats tracked, we could now provide a more complete map of what this spring migration looks like.

The importance of understanding bat migration

We are working with researchers across Europe to build a network that track not only noctule, but other bat species too. This is the beginning of a new wave of bat migration research.

We are finally developing a better understanding of where and when noctules migrate on a continental scale. This data will hopefully help conservation efforts; seasonal migration appears to be a risky period of a bats' life cycle, and they could be particularly vulnerable during this time of the year.

While European bats feel super well studied compared with the over 1,400 species globally, we still know very little about where bats go in the winter. This new tracking technology and a newfound excitement to study bat migration means researchers around Europe are putting renewed efforts towards searching and monitoring bat roosts.

Planning reforms threaten bat protection

As Bat News was about to go to print, the government published the long-awaited Planning and Infrastructure Bill. We have been concerned about government proposals for some time but until the publication of the Bill we had not seen the detail and it is even more concerning that we had imagined.

In the Winter 2024 editorial Kit Stoner, our CEO, shared how we have been trying to engage with the government in the lead up to the arrival of the Bill. This has included responding to consultations, sending a detailed briefing to government officials outlining alternative solutions that protect both nature and economic interests, and exploring options through face-to-face meetings. Unfortunately, our calls to approach any perceived issues in a pragmatic and sustainable way appear to have fallen on deaf ears.

While the Bill states that it ***'will not have the effect of reducing the level of environmental protection provided for by any existing environmental law.'*** The reality is quite different.

The Bill is fundamentally flawed and not fit for purpose

We believe The Bill will pose a significant risk to bat conservation because it will:

- **Undermine the mitigation hierarchy** – Developers will no longer be required to avoid harm where possible.
- **Potentially remove the requirement for site-based surveys** – Bats are site-loyal species, and losing these surveys will make their protection almost impossible.
- **Allow developers to 'pay-to-destroy'** – A new Nature Restoration Fund would allow developers to bypass legal protections with no clear benefit for nature recovery.
- **Give more power to ministers, less scrutiny** – The Secretary of State could change protections at will, and communities will have fewer rights to challenge bad planning decisions.
- **Overload Natural England** – Already underfunded and overstretched, Natural England will be expected to take on even more responsibilities.

Disappointingly, and despite its many flaws, the Bill passed with a huge majority at its second reading in the House of Commons on Monday 24th March.

Blaming bats and newts is a dangerous narrative

In the lead up to the Bills publication, senior government ministers have repeatedly framed nature protection as an obstacle to development. Statements such as 'stop worrying about the bats and the newts' attempt to shift blame onto conservation laws rather than addressing the real causes of development delays.

Multiple government reviews have found that current environmental laws are fit for purpose and the government has not offered any evidence to show that environmental laws are causing delays, especially at the scale suggested. These robust and effective environmental laws have been systematically undermined by the chronic underfunding of local planning authorities and Natural England, in turn eroding the planning and licensing processes. This Bill will weaken wildlife protection and will not solve these problems – it will only lead to further environmental damage and decline in bats.

HS2 Bat Tunnel

The £100 million HS2 bat tunnel that has been in the media repeatedly since November 2024, was mentioned 10 times during the House of Commons debate. The use of this case fails to recognise the real failings of HS2 and previous governments in not carrying out a timely strategic environmental assessment. This could have identified viable alternatives that could have avoided significant expenditure and delay.

The government appears determined to sacrifice the natural world unnecessarily to win short term gains. To quote Sir David Attenborough: 'It is our responsibility to do everything within our power to create a planet that provides a home not just for us, but for all life on Earth.'

The campaign has begun and we need you to join it

Within days of the Bill being published we emailed all bat groups in England (the Bill does not impact Scotland, Wales or Northern Ireland directly) and the policy campaign email list as well as publishing an article on our website. We asked everyone to contact their MP and ask for an urgent meeting. Thank you to everyone who responded to our call, as we write this we know that over 20 MPs that have been directly contacted.

This is a critical time for bat conservation and we need as many of you as possible to work with us to try and make the government listen. Without the necessary changes, populations of bats and other site loyal species such as hazel dormice will suffer significant negative impacts which will set back conservation decades.

This is a very dangerous time for bat conservation and we need your help. To get involved and kept updated with the campaign, please join out mailing list http://eepurl.com/gGqJDH. We would also welcome any donations towards our policy and advocacy work which is currently taking up a lot of our limited resources.

Claire Boothby: Loss of a much-loved conservationist

Claire Boothby worked at BCT for six years, until she lost her life to cancer at the start of this year. She worked first as the Bats in Churches Training and Survey Officer and then as Head of Conservation Projects. Claire is greatly missed by her colleagues as well as her family and friends, but she has left a lasting legacy with her work and with all who knew her.

Claire enjoying a hot chocolate in December 2024

It was Claire's ambition to affect a positive change for wildlife conservation over the years that she studied, volunteered and worked in the sector. Her career got off a to a flying start (flight being a bit of a theme with Claire) with a first-class degree in Biodiversity and Conservation from Birkbeck, University of London, followed by work at the National Trust. She then went on to do an MSc in Ecological Applications at Imperial College London, and then a job at the British Trust for Ornithology as Development Officer (Garden BirdWatch).

In 2018, Claire came to BCT for an interview. It had been a long day and Claire was the last person we saw, but the decision that she was exactly who we wanted for the role on the Bats in Churches partnership project was unanimous and we offered her the job the same day.

In her own words, Claire's interest in bats "…started years ago at a bat walk at National Trust Polesden Lacey in Surrey, where pipistrelles poured from the water tower at dusk and serotines were often heard on our heterodyne bat detectors when meandering along the long walk in the garden."

Whilst at BCT, Claire's impact benefitted not only Bats in Churches in England she also contributed directly to Species on the Edge in Scotland and Natur am Byth in Wales. She had a great sense of fun, a very infectious smile and was hugely valued by those she worked with, always making time to support others. Claire's career saw her involved with a range of survey work, authoring scientific papers and engaging volunteers with conservation of both birds and bats. Her own conservation volunteering included practical habitat management work, bird ringing and surveys for the National Bat Monitoring Programme.

In both her volunteering and her working life, Claire brought energy and enthusiasm to all that she did. Her adventurous spirit showed in her travels (including a gap year in South Africa, volunteering trips to the Peruvian Amazon and Madagascar) and her active life, from her regular park runs and hiking, to the more extreme hot air ballooning and flying planes.

After Claire was diagnosed with breast cancer, she continued to live life to the full for as long as she could. Post-diagnosis and, in some cases, mid-treatment, activities included skydiving, abseiling, wing walking, racing cars around Brands Hatch, and even taking a turn at modelling for the Bold & Proud charity fashion show she co-organised last spring. She raised money for cancer charities and for BCT; so typical of Claire, to be thinking of others even when she herself needed care and support.

Claire made a real difference in the world, more than exceeding her ambition to affect a positive change for wildlife conservation during her life. She was an inspiration to all those she worked with and her legacy will be long-lasting.

We miss you, Claire.

Claire, with Ione Bingley, at National Bat Conference 2019 promoting the Bats in Churches Project

Claire, with Tristan Evans, on a church survey training day run by Roger and Sylvia Jiggins

Claire Boothby: Loss of a much-loved conservationist

© Claire Boothby

◀ *Claire and her husband Andy on a walk at Hellvellyn*

▼ *Claire and Andy with their dog Willow at Glastonbury Tor*

© Claire Boothby

▼ *Claire wing walking in 2023*

© Andy Goodwin

© Bats in Churches Project

Claire at the 2024 CIEEM awards with colleagues from the Bats in Churches Project

© Bats in Churches Project

Claire setting up a bat detector at St Mary Magdalene's Church, Longfield, for the National Bats in Churches Study

© Heather Hole

Claire planting her memorial tree at Polesden Lacey, Surrey

© Spinnaker Tower

Claire abseiling down the Spinnaker Tower, Portsmouth, to raise money for BCT in 2023

A new series exploring the fantastic bat conservation organisations across the world!

Bats without Borders

By **Rachael Cooper-Bohannon**, CEO of Bats without Borders

Bats without Borders (BwB) is dedicated to conserving bats, biodiversity and healthy ecosystems within southern Africa's changing landscape. Our work spans four main work themes – **applied research** – to inform conservation priorities; **conservation** – from grassroots action to advocacy; **engagement**; and **capacity strengthening**.

Many people will be familiar with southern Africa's incredible wildlife biodiversity, breathtaking scenery and diverse landscapes (from mountains to desert) and rich human culture and history. Yet, southern Africa also has an impressive bat diversity with over 130+ species from 11 bat families. Below, we showcase a few of our current projects, under our capacity strengthening and engagement themes.

Bat and moth game - Ndola Primary School

Developing conservation capacity

We strongly believe that in-country capacity and expertise is essential to the long-term conservation of southern Africa's bats. This is why a large part of our work involves developing and strengthening local capacity through training and mentoring. Inspired by the amazing work carried out by bat groups across the UK, in 2023 we launched 'How to set up a bat group': a four-month free online programme which aimed to develop engagement and conservation capacity across southern Africa.

Twenty-five people from seven southern African countries completed the training, with six new bat groups established as a result. We're delighted to say we started another intake this February. These new recruits will join our 2023 cohort, strengthening the foundations of a southern African bat group network.

Alongside this, we were really excited to roll out our Early Career Training Pipeline in October 2024 – this is a one-year programme for African early career professionals working on bats or other underrepresented taxa to build confidence and develop skills in employability, leadership and conservation. With training ranging from grant writing to project management, this programme provides training and support for individuals at the start of their conservation careers.

Engagement: Copperbelt bats

Engagement is another key priority to promote human-bat coexistence. Bats have certainly had a lot of bad press, but superstition and genuine fear has also contributed to hotspots of human-bat conflict. This is the case for the bat populations within the Copperbelt Province (Zambia), who are at the centre of an exciting

new conservation project: the Copperbelt Bats Project, which aims to safeguard straw-coloured fruit bats in Ndola and Kitwe.


Straw-coloured fruit bats

© Frank Willems

Did you know? The iconic straw-coloured fruit bats *(Eidolon helvum)*, often called the "Gardeners of Africa," are renowned for their role in the world's largest mammal migration. Every year, millions of individuals travel across the African continent, with around ten million individuals arriving in Zambia between September and January, most heading to Kasanka National Park - home of the world's largest fruit bat roost. We are also lucky to have large, important urban roosts in Ndola and Kitwe.

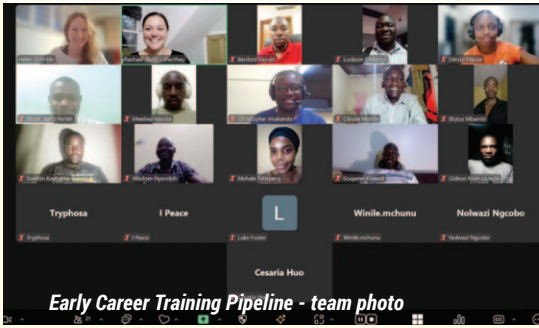
As long-distance migrators, straw-coloured fruit bats provide crucial ecosystem services, particularly in seed dispersal and natural reforestation. However, despite their ecological value, these bats face severe persecution. In Copperbelt Province, migrating straw-coloured fruit bats arrive in October each year, where widespread deforestation has forced the bats to find refuge in gardens in urban areas. Some residents have been trying to move the bats by cutting down trees, or smoking them out, and in some cases killing bats too.

The Copperbelt Bats project aims to use a co-designed, inclusive and participatory approach to working with young people in local schools to find solutions to human-bat coexistence. In November last year, we worked with a Youth Panel from Ndola Primary school to trial Classrooms without Walls – a bat engagement programme to inspire an interest in bats, nature and science; and co-design a bat story book with learners. The Youth Panel worked together to write stories and create artwork to address human-bat coexistence situations and champion local support for bats. This stage of the project was a huge success and we are now rolling out our engagement programme with other schools within the province.

Our next step will be to run a Train the Trainer workshop, providing resources and support to enable environmental educators and teachers to deliver our lessons, embedding vital bat conservation messages within their lessons and helping to scale the programme. We hope that our work in Copperbelt can be used as a blueprint for dealing with human-bat conflict situations in other areas too.

If you would like to know more about our work and what we have planned for 2025 you can visit our website www.batswithoutborders.org or follow us on our social media channels.


Classrooms without Walls lesson - Ndola Primary school



Early Career Training Pipeline - team photo

British Bat Survey: an exciting new survey using cutting-edge technology

By **Sophia Davies**, BBatS Project Officer and
Hannah Van Hesteren, Engagement Officer for Project NightWatch

The National Bat Monitoring Programme (NBMP) is an annual series of bat surveys undertaken by thousands of dedicated volunteers. The data we collect are used by the government, research and conservation organisations to monitor the health of our environment, inform policy and improve the conservation of bats.


Barbastelle

These surveys have been designed to provide robust population trend estimates, i.e. we can determine if bat populations are increasing, decreasing or stable.

Bias in population trends


Common pipistrelle

It is impossible to count every single individual bat across the UK so, in order to understand how bat populations are doing, we select a small representative group from the bat population (called a sample) and draw conclusions about the rest of the population. Representative really is the keyword; you want a diversity of locations and habitats throughout the year, so that the assumption that your sample matches the entire population is as accurate as possible.

We encounter our first bias – geographical biases. Because the NBMP relies on volunteers, we have greater survey coverage in areas of higher population density and in certain habitats.

The main causes of this are a) the uneven density of the human population across the UK, with larger numbers of volunteers in the south east resulting in much higher levels of sampling than in the north east, for example; and b) the relative inaccessibility of certain habitat types, with uplands being very underrepresented compared to lowlands.


Greater horseshoe bat

Another important thing we need to consider is randomisation. Ideally, samples or, in our case, our bat monitoring sites, should be randomly selected, so we get a better picture of the population. Monitoring sites where certain bat species are not present is still valuable because it can help identify populations that are expanding into new areas.

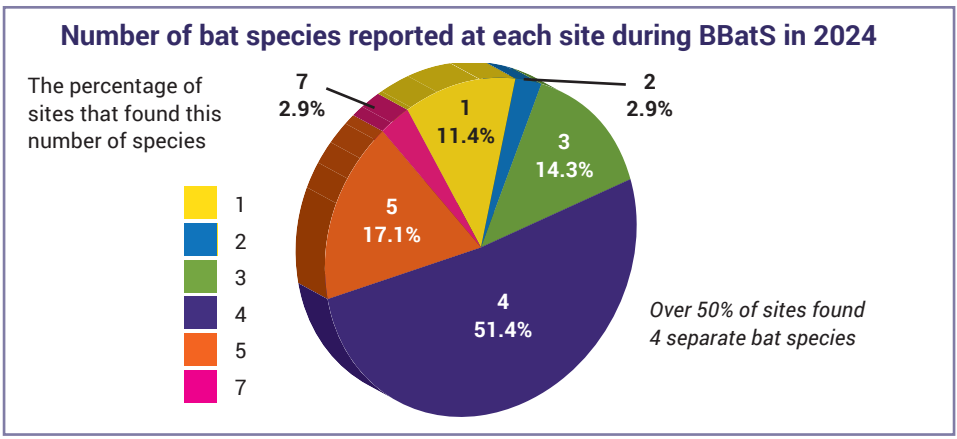
Generally speaking, when survey participants are able to select any site, there is a tendency to select sites where more bats would be present. Who wouldn't want to see more bats if they can, right? To try to avoid this, NBMP volunteers are offered a list of pre-selected survey sites from which to choose.

Introducing the British Bat Survey

The British Bat Survey (BBatS) is a structured passive acoustic monitoring survey of bats designed to provide populations trends for bat species found in GB, particularly for species not currently monitored within the NBMP.

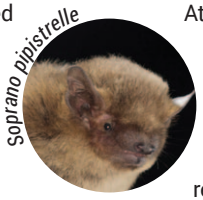
Participants are loaned a simple bat detector, called an AudioMoth, which they install at a monitoring location for two periods of five nights in July. The monitoring locations only need to be visited during the day to install and retrieve the AudioMoths.

Then at BCT, we process the recordings through our Sound Classification System (SCS), a brand-new AI software which automatically identifies to which species that bat call belongs. To make sure the identification is correct, there is some



manual verification. To finish, each volunteer is sent a report of what was recorded at their site(s).

Because of the new technology we are using, the AudioMoth and our SCS, this new survey will allow us to get even coverage across all habitat types and parts of the country. This should solve some of the biases we mentioned earlier.


Soprano pipistrelle

Supporting BBatS

We still need to get monitoring sites set up across all regions and habitats. Remote and upland areas have always proved more challenging to get covered, so we are particularly keen to hear from anyone who lives in or enjoys hiking or driving to these types of locations.


Lesser horseshoe bat

Take a look at the website www.surveys.bats.org.uk/survey/87 to see if there is a location near you that you would like to survey. This is a beginner level survey with no training required. BCT staff are on hand to support with the initial set up and to answer any questions you may have.

As the project grows, it will significantly improve our ability to monitor population changes in British bat species at different regional and habitat levels, and this will help inform conservation priorities.

Making bat monitoring more inclusive

At the Bat Conservation Trust, we're working to make bat conservation more accessible to everyone. We want everyone, everywhere, to have opportunities to connect with bats and nature and get involved with conservation. As we mentioned earlier, representation is important.

We recognise there can be many barriers to connecting with night-time nature which can impact different groups in different ways. Through questionnaires, focus groups, and evaluation, we are working to understand the motivations and challenges that different communities face to monitoring bats.

Our latest report highlights key findings from research conducted last winter, and explores the long-term benefits that come from monitoring bats in a welcoming community environment. We also look at ways to promote surveys and make volunteer training and support more inclusive and explore how to strengthen volunteer connections within the NBMP.

This work wouldn't have been possible without the valuable input of those who shared their experiences - thank you! We're already putting these insights into action and are excited about the future.

To learn more and get involved, read the full report here: www.bats.org.uk/NBMP-EDI-report-2024.

Bats and Large-Scale Housing Maintenance Projects – guidance launched

BCT is delighted to announce the publication of Bats and Large-Scale Housing Maintenance Projects Guidance for England: www.bats.org.uk/bats-large-housing-projects-guidance.

The loss of natural roosts has increased the importance of buildings/houses and other human-created structures for bats. BCT recognises the importance of listening to and engaging with relevant sectors to deliver the best outcome possible for bats and people. This guidance is a result of a collaborative effort that addresses the needs of the communities and industries involved.

Celebrating bats and bat workers

Bestowing some New Year's Honours of our own, we announced our newest Batty Laureates and the BCT Hall of Fame inductees.

Two more bat workers were inducted into the BCT Hall of Fame for 2024: Sylvia Bevis and Jane Harris.

The Batty Laureate awards are awarded for poetry or prose which celebrates bats in creative writing, both our winners this year have done this admirably. The Young Batty Laureate is Jackson Hill, age ten, for their poem "When the bats come out". The Adult Batty Laureate is Liz Vinson for her delightful poem entitled "The Badger and the Bat". www.bats.org.uk/celebrating-bats-and-bat-workers.

©LizVinson2024 The Badger and the Bat

BCT's new eLearning platform

Through our eLearning platform we are pleased to offer new courses, modules and other educational content that can be purchased and completed at any time. From an introduction to bats and artificial lighting, talks from past conferences and the basics of Biodiversity Net Gain, and more.

We are in the process of developing more courses and modules for this site so keep your eyes peeled: learn.bats.org.uk.

National Bat Conference and Annual General Meeting 2025

We are planning to hold the next National Bat Conference (NBC) on 5-7 September 2025 at University of Durham. More details to follow, but please save the date! Tickets will go on sale April 2025.

The Annual General Meeting (AGM) will be held at the conference and online, on Saturday, 6 September 2025 (you do not have to attend the NBC to attend the AGM).

If you are interested in attending the AGM online, please register here: www.bats.org.uk/agm. Even if you cannot make the meeting itself, you can still vote on resolutions. We will make the agenda, annual report and draft accounts available online (the same link above) from 26 July 2025.

Living Alongside Bats in Churches Grant Fund OPEN

We are excited to announce that eight places of worship will be receiving funding from the first round of the Living Alongside Bats in Churches Grant. These places of worship will implement their plans for managing bat roosts and engaging with their communities over the next 12 months.

The next round of applications is now open, and will close at 9am on 28 April 2025. We encourage any place of worship in England that needs assistance with their bat roost, such as managing a cleaning issue, to apply for the Living Alongside Bats in Churches Grant Fund.

To find out more and apply, visit our website www.bats.org.uk/living-alongside-bats-in-churches-grant.

Social media update

In case you haven't noticed, we are now on Bluesky – https://bsky.app/profile/batconservation.bsky.social. A reminder that we are also on Facebook, Instagram and LinkedIn; if you are on any of these platforms, do give us a follow for regular updates.

We have also moved our blog and we are now on Substack. We'd love to hear from you! If you would like to share your story and passion for bats and inspire more people to get involved, please email comms@bats.org.uk.