Wildlife World

people's trust for endangered species

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UK

Help for hedgehogs

Return of the pine marten

Peak District's mountain hares

Counting beetles

Sleeping Beauty

How PTES is helping uncover the secrets of the dozy dormouse

Overseas

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Predator points
A project in Tanzania is offering payments to villages on the basis of the amount of wildlife in their surrounding area.

Reds return
With our help, red squirrels are coming back to parts of the Scottish Highlands they've been absent from for 50 years or more.

Frontline
Rabbits are a keystone species for some habitats, but they're not native – what does this tell us about how to treat our aliens?

Bringing the wild back to life

Wildlife World is published by People's Trust for Endangered Species

Our wildlife is disappearing. Almost two thirds of species in the UK have declined in the past 50 years. There's nothing natural or inevitable about this. It can be stopped. And everyone can play a part. That's why People's Trust for Endangered Species exists.

Find out more
www.ptes.org

GIANT TORTOISES
Galápagos giant tortoises were decimated in just 200 years. In the first half of the 19th century, whalers collected giant tortoises by the hundreds for food on long voyages, drastically depleting the populations. More recently invasive species have killed many and destroyed their habitat. We're helping the Giant Tortoise Restoration Initiative to restore these amazing creatures on Santa Cruz Island to their historical range and levels.

Welcome

One thing's for certain, we completely rely on the enthusiasm of many people to achieve what we do – our loyal supporters, our tireless volunteers and our expert staff.

So it's sad to say goodbye to Amy-Jane Beer, editor of this magazine and its predecessor for more years than either of us care to remember. Amy has lots of new projects lined up, writing in various publications and authoring books. Thank you, Amy, for all your support, we will miss you.

In turn, I'm delighted to welcome James Fair to the editorial hotspot. James was, until recently, environment editor of *BBC Wildlife Magazine*, writes for many other outlets too, and has written two books. Prior to that, James worked on conservation projects in Ecuador and Bolivia, so understands the challenges in the field first hand.

As spring advances, we enter our survey season. Please tell us when you spot stag beetles, water voles, and all mammal species on roads or in your local green spaces and report them at **www.ptes.org/surveys**. The more we know, the more effective we can be. Thank you.

Jill Nelson is the Chief Executive of People's Trust for Endangered Species.

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people's trust for endangered species

In this edition

PTES PEOPLE

© Cat Hadler

Cat Hadler is a volunteer dormouse surveyor for PTES on the Isle of Wight, and believes she knows why the island is so good for one of our rarer native mammals.

I first got involved with PTES at Briddlesford Woods when I was studying countryside management. Our tutor Ian White, who is also the PTES dormouse officer, took a group of students there for a winter works party to carry out habitat management for dormice.

Since that first visit, I've continued to go on the winter work weekend every year and have also trained for and obtained my dormouse licence. I volunteer for PTES by assisting and leading hazel dormouse surveys at Briddlesford, and I also help others work towards getting their licence.

In my day job, I work for the National Trust in Hampshire and while we look after some beautiful sites, none of them have, as yet, provided any dormice – so volunteering with PTES is a good way to get my dormouse fix!

It's also very interesting to be able to compare the thriving understory of the woodland at Briddlesford – which doesn't have any deer – to our own woodland on the mainland where deer populations are heavy.

The difference is stark. I do think that one of the reasons Briddlesford is so good for dormice is down to its thick, unbroken tangle of scrub, bramble and regenerating tree species. It also proves quite a challenge for humans to scramble through, when surveying the dormouse boxes hidden within – we all bear the scars!

> **“I volunteer for PTES by assisting and leading hazel dormouse surveys at Briddlesford, and I also help others work towards getting their licence.”**

Find out more about becoming a volunteer
www.ptes.org/volunteer

When is it OK to be loving the aliens?

Non-native species can do tremendous damage to our wildlife, but just because it originally came from another country doesn't automatically means it's bad news, says **James Fair**.

The new film version of *Watership Down*, released at the end of 2018, demonstrated what an important role rabbits play in British culture. They're the inspiration for not just this classic children's novel, for example, but also Beatrix Potter's most famous character, Peter Rabbit.

Meanwhile, this Easter, you may have found yourself nibbling on a chocolate bunny, even if that tradition is more indebted to another, closely related British mammal – the brown hare.

Perhaps you spotted my deliberate mistake there. Neither species is British; both were probably brought over by the Romans, though rabbits didn't establish themselves properly until the 12th century. Rabbits (and hares) are usually described as naturalised, and in the past 900 years, they've entrenched themselves in not just our culture, but as a keystone species in some of our habitats.

In the sandy heathland of the Brecks, on the Norfolk-Suffolk border, for example, a Natural England-funded programme is attempting to restore rabbit numbers because of their vital role in maintaining these unique grasslands. By keeping the grass in check, they allow other plants to flourish. They also graze dune slacks where natterjack toads breed, and are a food source for a number of native predators.

So, immigrants from Europe they may be, but rabbits bring important habitat management skills. Not all non-natives are so benign, of course. Escapees from fur farms in the 1960s and 70s, American mink have been a conservation catastrophe through predation of our native water voles, and populations of Ratty shrunk by an estimated 90 percent over 40 years or so as a result. I've got nothing against mink – I've seen them in the wild in Canada, and they're admirably feisty animals, but they shouldn't be here.

It's simple to look at rabbits and mink, and decide which we should keep and which we'd like to be rid of. But what about ring-necked parakeets? In the last few decades, they've run riot over much of the south-east but, apart from research suggesting they drive smaller birds away from feeding spots, there's no proof – at present – that they're anything but a colourful addition to our native fauna.

'There is evidence, from Belgium, that ring-necked parakeets may be competing for nest holes with some native birds, such as nuthatch,' states the GB Non-native Species Secretariat. 'Otherwise, the species currently appears to have little ecosystem impact.'

That doesn't stop hysteria about them. 'Should we cull the squawking parakeets?' asked a Daily Mail headline in 2016. '50,000 of them are threatening British birds, gobbling crops – and they are breeding like crazy.' There's a whiff of jingoism here, that these birds' 'lurid green feathers' and 'distinctive squawking call' are sufficiently good reasons for wanting rid of them.

© iStockphoto.com / Damian Kuzlak

Rabbits have entrenched themselves as a keystone species in our habitats

Of course, we should stop non-native species making their homes here. Some insects, such as Asian hornets, are of great concern right now, but let's not get hung up on a species just because it's an alien.

Take muntjac. They're not native and cause a problem in our woodlands because they don't allow the growth of the understory vegetation which is critical for species such as dormice and nightingales. But then that's also true of roe deer, which are native. Both need to be managed to reduce their impact because they have no natural predators.

At a time when our wildlife agency Natural England is permitting culls of some native species such as buzzards, we surely owe it to all our wildlife – whether it strictly belongs here or not – to base our decisions on good science not blind prejudice.

James Fair is a journalist specialising in wildlife conservation stories and editor of *Wildlife World* Magazine.

From the latest on our water vole monitoring work to a new study aiming to uncover the secrets of a rare beetle, here's how PTES is putting your generous donations to good use.

On the look out for Ratty

Volunteers helped us to monitor 250 sites across the UK for signs of water voles in 2018 – thanks to everyone who took part.

© iStockphoto.com / Phil Scarfett

Potential habitat from Cornwall to the Highlands of Scotland and from Suffolk to Anglesey was assessed as part of the fourth year of the National Water Vole Monitoring Programme .

Of the 250 sites, 106 had active water vole field signs present (dung latrines, feeding signs or actual sightings), eight sites had just burrows present and 136 had no signs.

Last year we decided to extend the survey period from mid-April to mid-June, which we will do again this year. So from 15th April we're calling for volunteers to visit their site and let us know what they find. We plan to produce a report in 2020 on the data collected over the first five years – we'll keep you posted.

If you'd like to take part this year, there's still time to sign up. You can find out more about what's involved and register to take part at **www.ptes.org/watervoles**.

Beetle-mania

The noble chafer is hard to monitor, but a new technique could help scientists reveal its true status.

© Henrik Larsson / Shutterstock.com

Back in February, we heard the alarming news from a scientific review of surveys that insects are declining all over the world.

© Paul Brock

Noble chafer beetles are one of the most threatened British species, and they're especially tricky to survey. In the past, we've had to rely on looking for their larval droppings (frass) in tree holes.

Now PTES is funding **Deborah Harvey**, at Royal Holloway University of London, to use a novel survey method to find out where they are and where they're absent.

The method was successfully trialled last year in the New Forest. It uses a chemical lure, made in a laboratory, that mimics the female beetles' pheromone, attracting males to the survey trap. The traps are checked daily, and captured beetles are photographed and released unharmed.

Deborah plans to extend the trial to other parts of the country. We stand a good chance of discovering new sites for noble chafers, and we'll also be able to check old sites where we have records of frass to see whether the beetles are still present today.

Managing for hedgehogs

Making the environment more hedgehog friendly is vital if we are to save our much-loved prickly friends.

© Coatsey / Shutterstock.com

The decline of hedgehogs in our towns and cities appears to be slowing, but we have still lost about a third of the population since the millennium. Small management changes can dramatically improve areas of land for hedgehogs and other species, potentially reversing the dramatic decline we're seeing and also enriching biodiversity more broadly.

With partners British Hedgehog Preservation Society, we've recently published free advice for anyone working in green spaces such as parks, schools, church yards and recreational spaces. We're working with managers of all types of urban green spaces, encouraging them to make those few changes to land management practices that will help bring hedgehogs back to the urban landscape – making hedgehogs a common sight once again.

There's lots of things they (or indeed many homeowners) can do – making fences or other barriers less impenetrable, so allowing them to make full use of their home range, is one, and creating log or leaf piles for nesting (and as a source of food) is another.

This guide, which was created with the help of the Suffolk

© iStockphoto.com / Jaroslav Frank

Wildlife Trust, can be downloaded for FREE from **www.hedgehogstreet.org/hempguide**. It provides useful pointers about a hedgehog's year and their life cycle, to help increase understanding of hedgehog hibernation. It also identifies the threats they face through habitat fragmentation and the impacts of roads, pesticides, machinery, predators and disease.

If you would like a free copy of this guide, please contact us at hedgehogs@ptes.org. We also run hedgehog ecology and management training courses for practitioners, so for more information and to locate your nearest course leader visit www.ptes.org/hedgehogtraining ●

Wild assessments

Does the loft conversion you're planning need input from an ecologist? Now it's easy to find out.

© Rudmer Zwerver / Shutterstock

New developments can put pressure on wildlife, and this is particularly a concern for protected species such as dormice and water voles, as well as thousands of other animal and plant species.

PTES is one of several wildlife organisations behind the new Wildlife Assessment Check, an online tool that alerts you if there are threatened species where you intend to build. Whether you're a homeowner wanting a new kitchen extension or a small-scale developer working on a building project, the tool will help you reduce delays and unexpected costs by assessing your project early on in the planning process.

You just enter the postcode and type of work planned and answer some quick questions about the site. In just five minutes you'll know if you're going to need professional ecological advice and receive a report to download and give to any consultant ecologist employed.

Find the tool at: **www.ptes.org/free-wildlife-assessment-checker-tool-for-homeowners** ●

Grants for mammal conservation

Every year, we award funding to scientists working specifically on mammals in the UK.

© iStockphoto / SeppFriedhuber

Here's the latest on the projects that, with your continued support, we're funding:

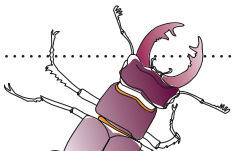
- **Rosie Woodroffe** is working with farmers, conservationists and the local community to test a bovine TB vaccine as an alternative to culling badgers in Cornwall.
- **David Rickwood's** team of volunteers will monitor Fingle Woods, on the northern edge of Dartmoor, as management is carried out over the next few years. They will investigate what practices will support the hazel dormouse population while turning what is a conifer plantation back into deciduous woodland.
- Investigating what hibernating dormice need is vital as they spend half their lives in this vulnerable state. **Rachel Findlay-Robinson** will work at two sites, on either side of the country, to see what climatic conditions and micro-habitats are important to give them the best chance of survival.
- At the Waterford Institute of Technology, in Ireland, **Ciara Powell** will analyse hair samples from the pine martens we've released in Wales. The results will inform us which animals were successful at breeding and how many individuals from the original release have contributed to the gene-pool of the growing population.
- Up in the Scottish highlands, we're continuing to support **Alan McDonnell** and his team from Trees for Life (see Species in Focus, p8) and their reintroductions of red squirrel populations to newly-planted forests.
- Water voles are difficult to find. Our funds are supporting **Allan McDevitt** to analyse water samples to see whether we can find eDNA left by the animals – if successful, this will provide a really useful, quick detection tool for waterways across the UK. ●

DATES FOR YOUR DIARY:

7th June 2019
Summer on the Somerset Levels £60 supporter/£65 non-supporter
A day exploring the Somerset Levels and photographing its amazing wildlife, from otters to bitterns, dragonflies to wild flowers. Suitable for those with an interest in wildlife and photography at any level.

6th July 2019
The Butterflies of Briddlesford, Isle of Wight, £4 per person
Discover the wonderful world of our woodland butterflies on a guided walk. Learn how to identify a range of butterflies including woodland specialists such as white admiral and silver-washed fritillaries.

Find out more
www.ptes.org/get-involved



The return of Squirrel Nutkin

Once found throughout Great Britain, red squirrels slowly declined during the 20th century as a result of the introduction of non-native greys in the 1870s. Today, reds are confined to parts of Scotland, northern England, North Wales (mainly Anglesey) and a few other islands. Where they live close to their American cousins, the main focus of conservation work is to control the greys, which pass on fatal diseases to the reds. But there are some areas of Scotland where both reds and greys are absent, and here conservationists have the opportunity to do something different – to re-establish populations of our native squirrel in the knowledge that, as long as the habitat is right, they should thrive.

Highland return

With conservation charity **Trees for Life**, we're helping bring red squirrels back to the western Highlands after an absence of more than 50 years.

PTES is helping to fund one major project in north-west Scotland. Trees for Life has completed seven reintroductions over a broad area from Plockton, on the south side of Loch Carron (opposite the Isle of Skye), to Inverewe, on the shore of Loch Ewe, some 50km to the north. All the sites are being closely monitored, and – so far – the squirrels are thriving in their new homes. The first reintroduction, around the village of Shieldaig, took place in the spring of 2016. Some of the released animals bred that year and one was found to have dispersed 15km from the release site. Feedings signs suggest the squirrels quickly colonised all of the available woodland.

Habitat first

Since then, there have been a further six reintroductions, usually with about 20 individuals each time. According to Trees for Life conservation manager **Alan McDonnell**, as long as the habitat is suitable and they get the gender balance right, then the squirrels do well. 'They need a range of feeding sources,' McDonnell says. 'They'll take seeds from the cones of Scots pine, larch and sitka spruce, plus hazelnuts, acorns and even alder cones.' McDonnell and his team are also very pleased with the positive reaction of communities where the squirrels were released – many people get involved in keeping an eye on how the squirrels are doing and where they're going.

Mixing it up

Red squirrels were lost from this part of Scotland during the 20th century as a result of deforestation but also because they were shot by foresters. There's more forest cover today – and no one's going to shoot these squirrels – which is why Trees for Life is confident they will continue to do well. They also hope that, over time and with more tree planting, the separate populations will be able to mix, allowing for greater genetic mixing. 'Seeing the distances that the squirrels have moved, even over open ground, we hope they might be interacting sooner rather than later,' says McDonnell. Grey squirrels are not an issue this far north.

Welsh squirrels

© Katherine Barth

In a separate study, PTES intern **Katherine Barth** (right) is monitoring the survival of red squirrels translocated into the 100km² Clocaenog Forest in north Wales. In particular, she's looking at how wild-born individuals differ in how they establish their ranges in the forest compared with captive-raised animals, and also how the behaviour of those infected with adenovirus, which can cause diarrhoea and intestinal bleeding, is affected. With only about 1,500 red squirrels left in Wales, and few areas (apart from Anglesey) where they're free of greys, it's critical that we understand how to maximise their chances of survival. ●

Find out more
There's a short video on the translocation project on our website **www.ptes.org/success-stories/red-squirrel-translocation**

© Trees for Life

Our study in Clocaenog Forest is tracking red squirrels to see how the behaviour of wild-born and captive-raised individuals differs. With only an estimated 50 squirrels there, maximising their chances of survival is vital.

Scrapbook

We love hearing from PTES people, whether supporters or project leaders. Pictures, reports, emails, web posts and letters give a great sense of your passion for wildlife, so please keep them coming!

© AWF

Super roving rangers

Some good news from our rangers protecting bonobos in Democratic Republic of the Congo (DRC) – in a little over three years, they have patrolled 1,385km of the Iyondji Community Reserve. We and our co-funders, the African Wildlife Foundation, are delighted that poachers abandoned 10 camps as a result.

Leo planting insect-attracting plants

Leo's wild life

Amazing to see the work from one of our young supporters. This is Leo, aged six, making a pond for the frogs that regularly visit his garden. He's also built a bug hotel and planted wild flowers to attract insects. Next, he's making hedgehog food to place in the hedgehog house in his garden. Keep up the good work, Leo! You can join Leo in making your garden wildlife friendly this spring – your enclosed *Garden Wildlife Planner* has lots of tips to get you started.

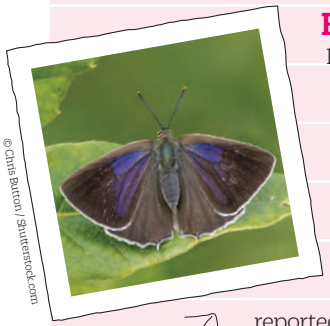
Dear PTES supporters,

I'm really proud to have received this trophy and a certificate of excellence from the Directorate of Forests, Government of West Bengal. I received these awards for my efforts protecting Asian elephants.

I couldn't have done it without the support of PTES donors – thank you.

Samya

A male Asian elephant



© Chris Button / Shutterstock.com

Purple hairstreak

Briddlesford's butterfly bonanza

Last summer, we held our second butterfly survey at Briddlesford Woods, the reserve we were able to buy in 1992-96 thanks in large part to our supporters. Our wonderful volunteer Jim Baldwin carried out the survey, visiting the site many times. Jim recorded over 2,000 individual butterflies, of 23 different species. There was a 26 percent increase in the number of butterflies seen, thanks to the hot summer and, excitingly, Jim spotted three more species than he did in 2017. His highlight was seeing two purple hairstreaks, the first reported sighting at Briddlesford since 2002. Another rare find was a dingy skipper, a butterfly that has declined sharply in recent years. A big thanks to Jim for carrying out such an extensive and important survey. If you're interested in seeing the butterflies of Briddlesford, we're holding a special butterfly event with Jim and our conservation officer Laura Bower on 6th July. See p7 for details.

Dingy skipper

© Arnaud Desbiez

Help for anteaters

Arnaud Desbiez was delighted to share this photo of a mother and baby giant anteater foraging in the Cerrado of Brazil. With our funds, his team is working on ways to reduce the number of anteaters killed by vehicles on the highways in Mato Grosso do Sul.

A day in the office with...

Holly Baines,
Marketing and Recruitment Officer

After gaining a Master's in wild animal biology, I knew I wanted to work in the charity sector and help endangered wildlife. I joined PTES last year, after working previously at a zoological society, and I absolutely love it. I really enjoy being part of such a passionate team and working for a cause that means so much to me.

My duties involve running wildlife campaigns and fundraising appeals and recruiting new supporters to continue our vital conservation work. I also help out with events and practical tasks at our nature reserves. I recently visited the Isle of Wight to carry out dormouse habitat management.

I spend lots of time communicating with our wonderful supporters and sharing knowledge about our projects and how they can get involved. There's always lots to get involved with here at PTES, and there's never a dull day in the office!

Putting up dormouse boxes at Briddlesford

Samyla working in the field

Samyla's trophy, awarded for his work protecting endangered Asian elephants

Working together for hedgehogs

We attended the 8th European Hedgehog Research Group Workshop in Hyde Park, London, this February. The Royal Parks were delighted to host this event, which brought together hedgehog researchers and conservationists from Germany, Switzerland, Denmark, The Netherlands, Czech Republic and the UK. It was a fascinating two days and an opportunity to reflect on all the hard work taking place in the UK and beyond to conserve this well-loved animal.

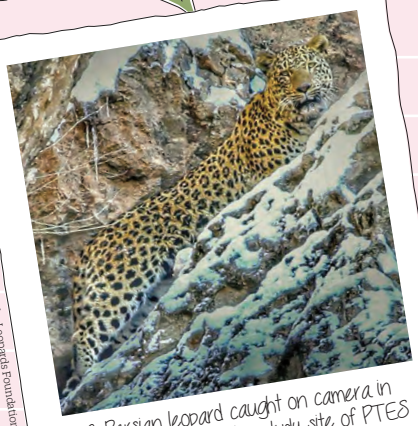
© Hugh Warwick

Ratty's champion

We were delighted to see the former environment secretary **Hilary Benn** do his bit as the House of Commons 'species champion' for water voles at the beginning of the year.

In response to his parliamentary question, environment minister Thérese Coffey said a Natural England review published in 2018 had concluded water voles had declined as a result of a combination of factors, including agricultural intensification, wetland drainage, damage to riverbanks (where they make their burrows) and predation by non-native American mink.

We trust that Hilary will continue to raise awareness among our decision-makers about Ratty's plight and push the Government to make good on its promises to protect one of our rarest mammals.



© Future for Leopards Foundation

A Persian leopard caught on camera in Tandoureh NP, Iran, the study site of PTES Conservation Partner Mohammad Farhadinia

© Martin Fowler / Shutterstock.com

The Big Sleep

Hazel dormice spend the coldest months of the year curled up under a blanket of leaf litter, and the more they sleep, the fitter they are when they wake up in the spring. We're finding out what we can do to give them a really good winter's rest.

It may sound like an easy life, but sleeping for up to seven months of the year has its challenges. 'Two thirds of the dormouse population die over the winter,' ecologist **Leonardo Gubert** explains. 'It's a really tricky time for them, mainly because of starvation, but also predation.' One dormouse he discovered had died after (gruesome detail alert!) something had discovered its nest, nibbled into the cranium and eaten its brain. A wood mouse, probably, Gubert says.

Funded by PTES, Gubert has been studying the hibernation habits of dormice in a number of sites in south-west England since 2016 (he's nearly finished the field work, and is writing up the findings). His goal is to come up with guidelines on how best to manage woodlands to optimise the chances of dormice surviving the winter.

During the summer, dormice build their nests in the tree canopy or hedgerows (or use nest boxes), but over the winter they'd rather hibernate on the ground under a cosy bed of leaf litter. 'Two to three metres up in the canopy, the temperature fluctuates more,' Gubert says. 'Over winter, they're looking for a place where the temperature will be more stable. It needs to be humid too, so they minimise the moisture they lose.'

So, a bed on the woodland floor it is, which is why they're so vulnerable to predation – foxes, badgers and corvids, mainly (not forgetting the occasional hungry wood mouse), all of which are experts at finding food during the lean winter months. A tiny, comatose, largely defenceless rodent versus animals in need of a meal during the lean winter months – it doesn't sound like a fair fight.

But, of course, dormice have evolved to deal with this. They make their nests from material in the immediate vicinity of where they're going to hibernate (so nothing stands out), and they also release very little scent. Gubert says they wake up during hibernation from time to time in order to change location, and this may reduce the odds of being located. All in all, they're the masters of going unnoticed.

'We used a trained sniffer dog to find the nests,' Gubert says, 'and this one was really good. It had been used to finding bat carcasses around wind turbines. But with dormouse nests, he really struggled. He couldn't pinpoint them.'

But Gubert believes dormice face new challenges during their hibernation period that need to be addressed. Woodlands often need to be managed for the benefit of many native species, but humans trampling around the woods while small 20g rodents are trying to get some kip isn't going to end well for the latter. People walking their dogs away from paths can disturb them, too.

So, what's the answer? 'You can prepare for this ahead of doing the work,' Gubert says. 'If you know there's an area where you will be working over the winter, you can make the habitat less attractive to dormice by removing ground cover so they hibernate somewhere else.'

There's no doubt that dormice need all the help we can give them. New research also funded by PTES, which came out last year, suggests numbers have fallen by 72 percent in the past 20 years. The main cause of this decline, identified by lead author of the study **Dr Cecily Goodwin** of the University of Exeter, was the decline in traditional woodland management such as coppicing.

Woodlands need to be managed for the benefit of many native species, but humans trampling around while small 20g dormice are trying to get some kip isn't going to end well for the latter.

'Dormice conservation would benefit from more broadleaf woodland in the landscape and more diverse woodland structure, ranging from new growth and scrub to mid-height woodland to old trees,' Goodwin said at the time.

It may seem counter-intuitive, but felling some trees in a woodland on a regular basis is vital if the essential mosaic of habitats is to be maintained. As **Professor Robbie McDonald**, who heads up the university's Environment and Sustainability Institute says, 'Forest managers should not be afraid to manage.'

Goodwin's research was mirrored, at least in part, by another study funded by PTES and carried out by **Fraser Combe**, from Manchester Metropolitan University. Combe used data from PTES' National Dormouse Monitoring Programme to model how populations are likely to fare in the future. He found that while 25 percent

ABOVE: Hazel dormice love coppiced woodlands with a good understorey and plenty of fresh growth.

LEFT: Despite their name, dormice don't only eat hazelnuts, though come September and October, this autumnal bounty is essential in allowing them to put on enough fat reserves for the winter.

RIGHT: Expert Leonardo Gubert, who is carrying out research into dormice, with the help of PTES, says they love to hibernate in a cosy nest under a blanket of leaf litter.

of populations are likely to have long-term persistence over the next 50 years, 40 percent are predicted to be at risk of local extinction. 'Conservation work should focus on these populations,' Combe says.

His study found that the risk of extinction was dependent on a number of factors – the size of the woodland (the bigger, the better); the area of buffer zone (again, the bigger, the better) between the forest edge and a feature such as a road; and the amount of woodland management that is carried out.

Woodland size isn't just about increasing the total area of habitat available (though it clearly does do that), but it also creates greater resilience against a changing climate. Global warming is likely to bring warmer, wetter winters, which will be bad news for dormice – it will wake them from hibernation more frequently and require them to find food at times when resources are low. Larger areas of woodland will offset the problems created by climate change by providing those additional resources.

'But buffer areas are really important too,' Combe says. 'There's a lot of new growth at a forest edge, which is a good source of food for dormice. Buffer areas allow them to disperse, too.'

Leonardo's study, however, appears to have thrown up something new about dormice that may have a positive bearing for the species. While most textbooks say they begin to hibernate in November, some of his radio-tracked animals were active into December and even January.

'The literature says dormice need to be at least 15g to survive the winter,' Gubert says. 'That's the magic number. Last winter, I found one that was 12-13g and collared him. He stayed awake until past the new year, six weeks after many of the others had hibernated. He was clearly still feeding, though I have no idea on what. It was in a garden on the edge of Dartmoor, so it could have been nuts, some insects, perhaps flowers.'

The point is that dormice may be more adaptable to a changing climate than we give them credit for. In parts of Italy, he says, they don't hibernate all. Instead they aestivate, sleeping through hot, dry summers. Having said that, warm wet weather is a problem, because it keeps them awake and they can't feed. And Cecily Goodwin's study clearly identified that dormouse counts were greater in years when winter temperatures were cold and summers and autumns were sunnier, warmer and drier.

But while there's only so much we can do about a changing climate, building greater variety into woodlands through better management is surely within our grasp. Other species besides dormice would benefit, including butterflies that rely on woodlands to breed such as the Duke of Burgundy and pearl-bordered fritillary. In some ways, it's a bit ironic that Britain's sleepiest mammal is also an important indicator for the health of our woodlands. ●

Top: © Lucy Bearman-Brown, Cate Barrow, Abi Gazzard, right © Kirsten Hinze

Roach's mouse-tailed dormouse

Funding the hunt for a dormouse that's even rarer and sleepier than our own.

We're helping researchers in Bulgaria discover more about one of the rarest mammals in the whole of the Western Palaearctic (an ecozone encompassing Europe, North Africa and the northern part of the Arabian Peninsula).

Roach's mouse-tailed dormouse has a highly restricted range. It's only found in south-east Bulgaria, parts of Turkey and probably Greece. Only one individual has been caught by scientists in the past 40 years. Now a team of scientists from the Habitat Foundation has begun a systematic monitoring programme in the hope of uncovering the secrets of this even more elusive relative of our hazel dormouse.

With funding from PTES, they've put up 100 nest boxes and placed three remote cameras in two parts of Bulgaria where the dormice are believed to be found.

'Nest boxes are a useful tool for monitoring dormice,' says lead scientist **Dr Nedko Nedyalkov**. 'We know all European dormice (hazel, fat, forest and garden dormice) eagerly occupy them, so we hope the mouse-tailed will do so as well. We'll regularly check the boxes to see if they're occupied, and collect tissue samples, faeces and parasites to learn more about the species' biology.'

Unlike their cousins, mouse-tailed dormice aren't found in woodland, but by the side of arable fields of maize, barley and wheat, plus orchards, gardens and vineyards.

Very little is known about their behaviour or diet. In the wild, they've only ever been caught between late April and late August, but whether they're already going into hibernation as early as September is not clear. With your help, we'll soon know more about these rarest of rodents.

ABOVE: Unlike the hazel dormouse, Roach's mouse-tailed dormouse inhabits hedgerows alongside arable fields, vineyards and orchards.

RIGHT: With PTES funding, researchers have put up 200 nest boxes, which they hope will help them to monitor the dormice more effectively.

BELOW: Mouse-tailed dormice use hedgerows, trees and the ground in search of food – probably seeds and insects, though researchers don't know for sure.

Fact File

SPECIES NAME
Muscardinus avellanarius

COMMON NAME
Hazel (or common) dormouse

DISTINGUISHING FEATURES
Golden brown fur, large black eyes and a long, furry tail.

HABITS
Largely nocturnal, they spend their time in the canopy feeding on flowers, aphids and caterpillars in spring and summer, and fruits and nuts in autumn.

LIFE HISTORY
Dormice have litters of up to four babies, normally in July or August. Young dormice must reach at least 15g to survive hibernation, which usually extends from October-May (though see Leo Gubert's comments in main feature).

HABITAT & DISTRIBUTION
Broad-leaved (deciduous) woodland, especially those that are coppiced. Only found in the UK across southern England, South Wales and along the English-Welsh border.

CONSERVATION STATUS
Rare and vulnerable to extinction in the UK. On the European mainland found as far east as Moscow, as far south as Turkey and Greece and as far north as Sweden.

Conservation Partnerships

Using our extensive knowledge of where effective conservation work is taking place, we've selected five partners to receive £100,000 each over a five-year period, to help them ensure a future for some of our most endangered species. PTES grants manager **Nida Al-Fulaij** reports on how your money is making a big difference.

Snow leopards, Mongolia

Bayara Agvaantseren
Snow Leopard Conservation Foundation

Vision: **Over the next five years, Bayara will ensure that Tost National Park supports a thriving snow leopard population and is an exemplary model of community-managed conservation.**

The Tost landscape in Gobi, southern Mongolia, has long been recognised as an important area for snow leopards. Intensive camera-trapping has determined that 40 cats use the area and that there's a stable adult population of about 14 leopards.

The Snow Leopard Conservation Foundation (SLCF) has worked in the region for many years, protecting the big cats and helping local herding households gain autonomy over the land they graze their herds on.

In 2010, mining companies began to expand their activities in the area, and this could have been disastrous for snow leopards and other wildlife. Bayara and her team began a national campaign to have Tost upgraded to protected area status. Last year, in an overwhelming victory, Tost was declared a nature reserve and all mining licences for the area were revoked.

2019 target: The provincial government has recently pledged 80 million Mongolian tögrög (approximately £25,000) to fund the salaries of two full-time rangers and six support staff. Working with the local officials, Bayara's team will ensure that comprehensive management plans are created and adhered to. ●

© Snow Leopard Conservation Foundation

Persian leopards, Iran

Mohammad Farhadinia
Future4Leopards

Vision: **Working with local communities and policy makers, Mohammad (shown above) and his team aim to reverse the fortunes of Persian leopards through better law enforcement, anti-poaching activities and controlling contagious diseases.**

Iran has more Persian leopards (a subspecies found from Georgia and Turkey in western Asia as far east as Afghanistan) than any other country. Despite being protected, these leopards are threatened by habitat loss and conflict with local people.

But while rural herders do lose goats and sheep to the leopards (and losing just one can be catastrophic), they lose far more animals to disease. So Mohammad's approach is to help them by improving veterinary care to reduce the incidence of infectious diseases.

Simultaneously, the team are running education programmes in local rural schools. Making young people aware of the plight of leopards means that the next generation will hopefully treat these animals with greater understanding.

2019 target: Access trails are being created in the three main regions where the team works to facilitate anti-poaching patrols. ●

Slow lorises, Java

Anna Nekaris
Little Fireface Project

Vision: Slow lorises face twin threats of habitat loss and being taken from the wild for the illegal pet trade. Anna is working with Indonesian scientists and local communities to improve the fortunes of these tiny primates.

Over a decade studying slow lorises, Anna and her team have learnt they are highly territorial and that youngsters remain within their parents' home range until they're almost three. This shows that animals rescued from the pet trade are almost impossible to rehabilitate into the wild if there isn't space in the forest or support from relatives. It means it's even more important to stop them being taken in the first place.

Like all our conservation partners, Anna is also trying to help local communities find sustainable livelihoods. She's hoping shade-grown coffee will provide a solution. The coffee is intercropped with wildlife-friendly trees, increasing forest cover for native species.

© Little Fireface Project

2019 target: Anna will continue monitoring lorises, and move the coffee project forward. With luck, you may be able to enjoy your first cup of loris-friendly coffee later this year. ●

LEFT: It's not just humans who like coffee – Tyrion the slow loris was rescued from captivity and released into a plantation where the coffee is grown alongside native species that provide food for Tyrion.

Lions, Tanzania

Amy Dickman, Ruaha
Large Carnivore Project

Vision: The Ruaha and Selous landscapes of Tanzania are two of the most important landscapes for lions, but they still come into conflict with people. Amy and her team want to make animals safe from attack, and help communities too.

Amy is starting her five-year project this year. One simple solution to reduce the number of carnivore attacks on livestock is to create sturdy bomas, or enclosures, made of strong wire-mesh.

They've also started the 'porridge project', a school feeding programme which helps improve education in the area. They buy food from local women to provide a nutritious daily meal for children who may otherwise go hungry and not attend school.

2019 target: In four villages around Ruaha, Amy will trial a novel payment scheme that provides communities with benefits based on the amount of wildlife they have. Camera traps record the species, and different species earn varying points. This project really helps change attitudes to and raise awareness about wildlife. ●

© Billy Dodson

Giant otters, Peru

Adi Barocas,
Giant Otter Conservation Project

Vision: Adi aims to discover the impact habitat destruction and mercury contamination are having on giant otters' health, reproduction and survival rates, as well as on the fish they eat.

Though giant otters were given full protection in 1975, severe threats persist. Mercury contamination from gold mining (shown right) is a particular concern, and the Madre de Dios region of south-east Peru, which includes important wildlife areas such as Manu National Park, is a hotspot for this precious metal. As a result, 40 tonnes of mercury are released into the waterways of the area every year.

The Giant Otter Conservation Project's goal is to understand the impact mercury is having. Researchers are monitoring 70 identified individuals, and by comparing data on wildlife diversity and levels of contamination in protected versus mined areas, the team will generate information that will provide fact-based management recommendations to local authorities.

2019 target: Fish samples will be analysed to get a picture of mercury levels in the food chain, and Adi's team will continue to monitor where the otters are fishing and assess their reproductive health. A team will also run environmental education programmes in the area. ●

© Frank Hajek

Turtles of the Caribbean

Managing the traditional turtle fisheries of the Turks and Caicos is critical to conserving these reptiles, report **Amdeep Sanghera** and **Peter Richardson.**

The Turks and Caicos Islands (TCI) is a UK Overseas Territory (UKOT) in the northern Caribbean, where hunting sea turtles is a centuries–old tradition.

At the invitation of the TCI Government, in 2008 the Marine Conservation Society (MCS) started the TCI Turtle Project. With PTES support, we worked with the Government and fishers to collect data on both turtles in the wild and the fishery. Following consultation with fishing communities, we drew up recommendations to improve the management of the turtle fishery.

As a result, new regulations came into force in 2014, including a maximum size limit to protect sub-adult and adult green and hawksbill turtles and an eight-month closed season during the hawksbill breeding season.

But the illegal landings of two large satellite-tracked green turtles in the past two years suggest some fishers are breaking the law, so we plan to revisit the TCI to see how the regulations are working and what impact they are having.

With PTES support, this work is being carried out by the MCS's new UKOT conservation officer Amdeep Sanghera, who previously coordinated the original turtle project and has recently returned to TCI to re-engage with his network of fisher contacts to assess their awareness of the rules and compliance.

© Peter Richardson/MCS

What Sanghera has learned so far suggests behaviour is changing. 'Many of the fishermen who I previously saw landing large turtles said they don't any longer,' he says. 'Even though we think some don't observe the law, the sense that many are is encouraging.'

Anecdotally, there is information that more turtles are nesting across the islands' beaches. To fully understand the current state of TCI's turtles and whether any illegal fishing is taking place, Amdeep will work with local partners to monitor the docksides and turtle nesting on selected beaches.

He'll also survey local perceptions of the fishery regulations, and we will use all of this to make recommendations to the Government about the action required to ensure the fishery is properly managed to secure a future for the region's turtles. ●

Snakes alive!

PTES is funding a project in South Africa's Eastern Cape Province to save what may be Africa's – or even the world's – rarest snake from extinction.

endangered

Albany adders are confined to a single location

Protecting any species that's only known from a single location would be hard enough, but conservation of Albany adders – South Africa's and possibly even the world's rarest snake – is complicated by the fact that this single location is also mined for its sand by the cement industry.

Two surveys of its last-known home in Eastern Cape Province in 2016 and 2017 turned up a grand total of 17 recorded sightings, but it could have been worse: at one point the researchers were nearly resigned to no sightings at all.

Now, with our funding, a South African NGO, the Endangered Wildlife Trust (EWT), is talking to the cement company that owns the site to secure a protected area for the adders while trying to find out whether any other populations exist.

Albany adders are part of the viper family (so, related to our own common adder), but with even the larger females rarely growing much longer than 30cm, they're tiddlers. They probably prey on lizards and small mammals but, in reality, very little is known about their lifestyle.

They live in a shrub and thicket-dominated vegetation known as Coega Bonteveld, which in itself is thought to have declined by 90 percent. What's left of the adders' habitat may be enough to support just 200 individuals, the EWT believes, unless they can find other suitable areas.

Albany adders only became known to science right at the end of the 20th century – but with our help, we hope they will survive the 21st. ●

Find out more
www.ptes.org/albanyadders

© The Endangered Wildlife Trust

Cheetah chums

In Botswana's Kalahari, man's best friend is on the front line of cheetah conservation, reports **Jane Horgan.**

It's hard to live on less than $2 a day, but that's what many people in rural parts of Botswana have to do. In such circumstances, your livestock – mainly goats – are essential to your well-being. Until a cheetah or other predator comes along and takes one, that is.

Human-wildlife conflict is a huge problem in much of Africa, and farmers will often take the law into their hands and kill the predators taking their livestock, either by shooting them or through the use of poison-laced carcasses.

Thankfully, there's a solution. Livestock guard dogs are incredibly effective at protecting valuable domestic animals such as goats against predation. In Botswana the local Tswana dogs are perfect for the job – wiry and lithe with a short coat and perfectly adapted to the harsh Kalahari environment.

Since 2003, Cheetah Conservation Botswana (CCB) has promoted the use of Tswana dogs to protect livestock against predation. And it's worked. 'Our existing data show an average of at least 75 percent reduction in conflict and a 62 percent increase in tolerance for living with cheetahs,' says CCB's executive director Rebecca Klein, 'so great results so far.'

A placement programme started by CCB in 2013 has trained more than a hundred puppies and placed them with rural farmers suffering from conflict in the area. These farmers go from losing up to 30 animals a year to losing just one.

Now, thanks to a grant from PTES, CCB will place another 40 Tswana dogs with farmers living in Botswana's Ghanzi region in the western Kalahari, a critical wildlife corridor between the Central Kalahari Game Reserve and the Kgalagadi Transfrontier Park. The first ones will be handed over around Easter time to those farmers who suffer high losses to cheetahs, hyenas, jackals and African wild dogs.

The puppies are trained for three months before going to the farmers. They spend all day with the herds (when they're out in the open) and then remain in the kraals (livestock enclosures) with them during the night. They work by barking aggressively at danger, persuading predators to go elsewhere in search of a meal.

In addition, 240 farmers will attend workshops on how to reduce their losses to predators even if they don't have the dogs – training includes carnivore identification, livestock husbandry and the adoption of other protection measures such as the kraals.

With luck, farmers who receive these dogs won't feel the need to resort to retaliatory killing again. So, in a strange twist of fate, dogs are now protecting cats, albeit ones a bit bigger than your average tabby. ●

Tswana dogs protect livestock from predators.

© King Mookise

- There are only an estimated 6,700 cheetahs left in the wild. Human activity has resulted in the loss of half of the global population since 2000 through human-wildlife conflict, loss of habitat and prey and the illegal wildlife trade.
- Botswana is one of the most important countries in Africa for cheetahs, with roughly 2,000 individuals. But unlike larger predators such as lions, which are mainly confined to national parks, most cheetahs (nearly 80 percent) live in communal grazing areas and fenced ranches.

© Steve Mandel

Help for hares

The Peak District is the only part of England where mountain hares survive, and we're finding out how they're doing there.

With the brown hare technically an introduced species (brought over by the Romans some 2,000 years ago), Britain's only properly native hare is its mountain cousin.

And, on the whole, the only place you can see mountain hares is Scotland, and there are far fewer of them there these days. Research published in 2018 suggested numbers may have declined by as much as 99 percent in moorland areas managed for grouse shooting.

There's one location in England, however, where mountain hares are still found – a reintroduced population in the Peak District National Park. We're part-funding **Carlos Bedson**, now in the final year of his PhD study, to look at the viability of this population given human activities in the park and the possible impacts of climate change.

Carlos is drawing up a map of mountain hare distribution within the Peak District and identifying those areas within the park where hares could benefit from conservation action or habitat restoration. The last attempt to count the hares was carried out in the early 2000s, but most experts believe that they're in decline.

One thing's for sure – mountain hares are very difficult to monitor. They're largely nocturnal and live in our uplands, some of the most inaccessible and wildest parts of Britain. To improve his chances of getting an accurate assessment of the Peak District's population, Carlos has been using a sophisticated thermal-imaging camera – a smart piece of kit purchased thanks to the funding provided by PTES and the Hare Preservation Trust. ●

Find out more
www.ptes.org/mountainhare

© Ken Gartside

In the next issue of Wildlife World, Carlos will describe the challenge of searching for mountain hares in the the Peak District – and how the thermal imaging camera allowed him to watch them from a mile away.

How to manage our hedgerows

Managing hedgerows is vital if they are to be good for wildlife – our new survey will reveal the condition of hedges and give you tips to improve them says Megan Gimber.

There are an estimated 450,000km of hedgerows in the UK, providing habitat, food and safe passage across our increasingly fragmented landscape – dormice, bats, hedgehogs, birds and butterflies all depend on them.

In the 50 years or so after the end of World War II, more than 100,000km of hedgerows were removed. Fortunately, this rate of loss has slowed but evidence points to a worrying decline in hedgerow condition through poor management. If this persists, these hedges too will perish.

This is why our ambitious, new project is promoting better management of these precious assets. We're starting by launching a national survey to find out what condition our hedgerows are in. This will give immediate feedback to hedgerow owners on how to keep them in good condition.

Find out more
https://ptes.org/hedgerow

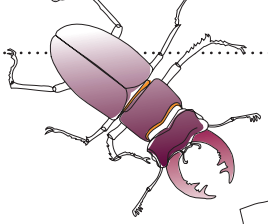
© Allen Paul Photography/ Shutterstock.com

Ideas that we want to see taken on board by more landowners include when best to trim (ideally January and February), not cutting every year, raising the cutting height each time and planting up any gaps to make sure connectivity is as good as it can be.

Most importantly, we will promote managing hedges in a cycle because this is key to their long term health – they can't be trimmed to the same shape indefinitely without a significant deterioration in quality.

An enormous 70 per cent of our landscape is farmland, and within that hedgerows are one of the only remaining semi-natural homes that our wildlife has. We need to make sure these are managed with wildlife in mind to give our birds, bees, bats and dormice the best chance to thrive.

This is where PTES comes in. The survey will be launched later in the year, but you can already get management tips from our website (left), and we'll be updating you along the way. ●



Gardening for stag beetles

If you live in south-east England, turn your garden into a stag beetle haven with a few rotten log piles.

© Roeanna Rolt

© Gert Kruger

Instantly recognisable and fascinating to watch, stag beetles have an amazingly long life cycle – the majority of which takes place underground in rotting wood.

Threatened by habitat loss, they're declining across their European range. South-east England is a stronghold, and they are doing well there despite pressures from development, cars and predators such as magpies and foxes.

One way to help stag beetles is to provide a home for them in your garden. They need plenty of decaying wood that's in contact with the soil or underground. They spend up to seven years as fat, cream-coloured larva in this subterranean existence, and just six weeks as adults.

And don't worry – despite their size (an adult male can be 7.5cm long, while the larva can reach a whopping 10cm) and those fearsome mandibles, stag beetles are harmless and don't damage living trees, plants, furniture or buildings.

If your garden already has mature shrubs and trees, or an area of woodchips, it might already be host to stag beetles. If not, try building a log pile or, better still, a log pyramid. To do this, dig a hole and place the logs in an upright position so there's plenty of wood underground.

When trees die or have to be removed, retaining the stumps is vital, even if you have to reduce them in height.

Stag beetles are at the edge of their natural range in Britain, which is why they're mainly found in the south-east. They don't like it too wet or cold or certain soil types. And even if you live in another part of the country, it's still worth having piles of dead wood because they can provide a home to other invertebrates and amphibians such as frogs and toads.

Find out more
www.pte.org/stagbeetle

Solving a prickly problem

Hedgehogs and badgers are old enemies, but does this explain the dramatic decline in the former's population in the UK? Our research is helping to unravel the truth.

If you were to run a poll to find Britain's favourite mammal, it's likely that both hedgehogs and badgers would be contenders for the top spot. That doesn't make them friends, but despite years of studying both species, scientists are still unsure just how far their enmity goes.

Yes, they know that badgers will attack hedgehogs. Yes, they know hedgehogs avoid badgers if they can, and that where badger numbers have been reduced by culling, hedgehog populations increase.

Against this, there are plenty of areas in Britain where the two co-exist, and hedgehogs have been shown to decline even in areas of low badger numbers.

One of the reasons the relationship between the two is complex is because, in general, they share a very similar diet – earthworms, beetles and other invertebrates. So, by predating hedgehogs, badgers may also be knocking out a potential competitor for the same resources – but is that what's really going on?

The fact is, nobody knows. That's why we're funding PhD student **Katie Lee**, from Nottingham Trent University, to untangle the relationship between hedgehogs and badgers. Results from her first year of field work show that hedgehogs are less numerous where badgers are present, but that where they're found together they don't actually mix.

© iStockphoto.com / Jaroslav Frank

Katie calls it 'spatial segregation at the finer habitat scale', and adds: 'This means we're seeing hedgehogs mainly in amenity grasslands, and badgers in arable fields and pasture. This may suggest we should focus our conservation efforts in villages where hedgehogs are found rather than more rural areas.'

By also examining how hedgehog density is affected by food availability, and the extent to which the diets of both species overlap, Katie hopes to come up with an answer as to what best predicts how these much-loved iconic mammals fare – is it habitat, food or badgers?

Find out more
Are badgers to blame for the decline in hedgehogs?
www.ptes.org/campaigns/hedgehogs/hedgehogsandbadgers/

Thanks to you

Without your support, we simply could not do any of the work we feature in *Wildlife World*. So whether you're a new supporter, or one of our longer standing ones who's been with us since the 1980s (or more!), thank you so much. It takes everyone, from you the donor, to scientists in the field, and everyone in between to make such vital research and practical action happen. Here's just a bit of what your support achieved last year.

HURRAH FOR HEDGEHOGS

Thanks to all of you for supporting our hedgehog work last year.

Hedgehogs remain an absolute priority for us and they're also a favourite with you. See p6-7 for news of a new booklet we've published on how to manage green spaces to benefit hedgehogs, which is part of our very successful *Hedgehog Street* campaign with the British Hedgehog Preservation Society. Also see p21 for the latest on a research project we're funding to uncover the mystery of how hedgehogs interact with badgers.

WE NOW HAVE OVER
60,000
HEDGEHOG CHAMPIONS

ORANGUTAN PROTECTION

Together we've helped reduce illegal logging in Lamandau Wildlife Reserve and Tanjung Puting National Park in Borneo.

With your support we helped the Orangutan Foundation mobilise its efforts to protect orangutan habitat. A network of guard posts carried out ground patrols and used aerial drones to spot illegal activity. Thanks to their work, in November and December last year only one case of illegal logging was detected. This visible presence on the ground makes such a big difference, and the funding we provided was made possible due to all of you who supported our orangutan appeal.

DORMOUSE DONATIONS

Thanks to you the first baby dormice in decades were born in an undisclosed Warwickshire woodland.

Last July, we reintroduced breeding pairs into the woodland, where we've since recorded juveniles. This was the 27th reintroduction led by us. That's more than 938 dormice in total, reintroduced to the British countryside thanks to our donors. We're now busy working with Warwickshire Wildlife Trust to connect these dormice with others reintroduced previously. By restoring and improving hedgerows, we're making safe corridors through which dormice can meet, mate and breed.

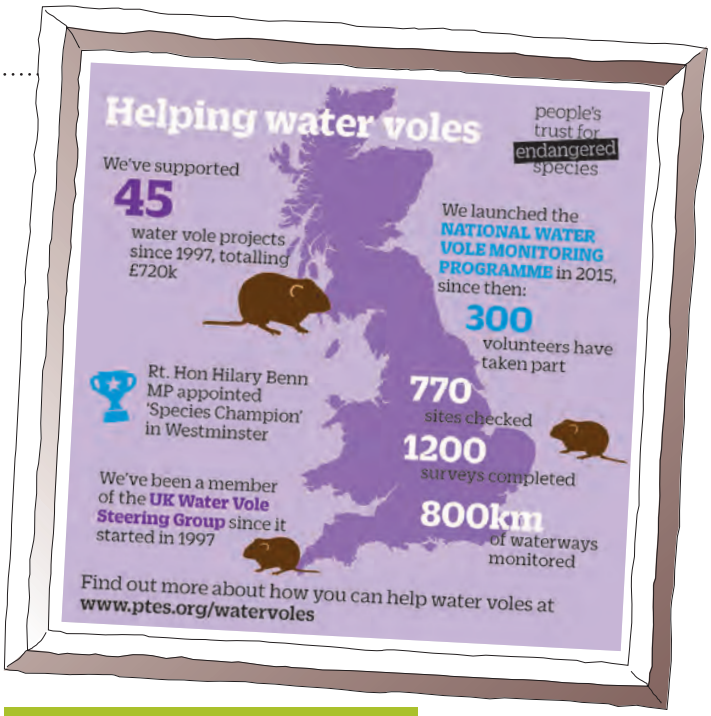
WE'VE REINTRODUCED DORMICE TO
12 COUNTIES
WHERE THEY'D BECOME EXTINCT

THE BEAR NECESSITIES

We're grateful to everyone who contributed to our Andean bear appeal earlier this year, which raised more than £2,600 to protect the real Paddington.

Andean bears are only found in South America, from Colombia and Venezuela in the north to Bolivia in the south – not just Darkest Peru. PTES is safeguarding vital cloud forest habitat at Rainforest Concern's Neblina Reserve in north-west Ecuador. Our small team is using the new funding to hold special workshops with local people to raise awareness about the importance of the forest and the bears and to train forest guards on how best to safely counter human threats.

THIS REGION IS HOME TO 17% OF THE WORLD'S PLANTS



HELPING WATER VOLES

2019 is the 5th year of our National Water Vole Monitoring Programme.

We've put together this infographic to show how much we've achieved with our supporters' and volunteers' help. Next year we'll be publishing *The State of Britain's Water Voles*, giving us a vital nationwide snapshot of how water voles are doing. We can only do all this thanks to you, our donors. To support our water vole work please visit: https://ptes.org/campaigns/water-voles/

Our *Living with Mammals* survey is now in it's 17th year. Thank you so much to everyone who's taken part. If you'd like to join in this year please visit www.ptes.org or contact us at lwm@ptes.org

SAVING ANTEATERS

We asked you to dig deep for giant anteaters last August.

Since then, we've started a new partnership with a private road concession in Brazil that runs through anteater habitat. They've asked us to monitor, and suggest mitigation strategies, for a highway that has recently doubled in size. It's great to have another highway concession working with us to reduce anteater roadkill in Brazil. Thanks to all who supported this appeal.

PEOPLE POWER

A big welcome to all our new PTES supporters.

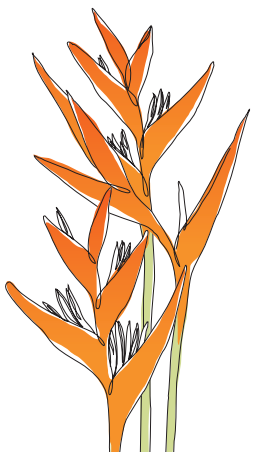
A record number of people joined our wonderful band of supporters last year. It's brilliant to have more and more of you with us, standing up for nature and caring about endangered species. The more support we have behind us, the more we achieve. None of it can be done without you all, so thank you for your generosity, loyalty, passion for wildlife and belief in the work we do at PTES.

Ruaha Conservation Project in Tanzania enlists local villagers to set camera traps to monitor wildlife. Points are awarded for each image recorded according to the risk posed by the species to humans or their livestock and how endangered they are – 1,000 points for dikdiks, but 20,000 for African wild dogs.

Points mean prizes for winning villages – support for healthcare, veterinary medicines for livestock and children's education. Forging this direct link between wildlife and human well-being is vital in transforming attitudes to carnivores.

Your support is vital.

Thank you.



people's
trust for
endangered
species