

# WILDLIFE world

people's trust for endangered species |



## LIVING ROOM

How much space does a hedgehog population need?

## SAVING CATS & DOGS

Latest news from some of our large carnivore projects



## NUMBER GAMES

How to count wildlife – tips from an expert



It's not in my nature to be a pessimist – which is part of the reason I appreciate the 'can-do' attitude of PTES – as an organisation it puts its weight behind people whose expertise, passion and hard work really can make a difference. But this has been a difficult year for conservationists in Britain, and for much of the time achieving the necessary support for wildlife has felt even more of an uphill struggle than usual. Certainly the political wind is against us. But the thing about wind is that it changes. Like seasoned sailors, we have to be ready and willing to make maximum headway when we can. This might mean taking a longer route. Sometimes it means just fighting to hold a position and not be swept disastrously off course by forces beyond our control. Giving up isn't an option.

Mariners have learned that when it comes to navigating tricky waters, tried and tested technology is infinitely better than instinct. And in conservation, it's the same. We must have a clear idea of our destination, and rely on scientific research to inform our decisions on how to get there. Science, like careful route-finding, takes time,

and while it's tempting to just hold a finger to the wind and go, our mission is too important and the risk of casualties is too high.

We feature PTES supporters in various sections of the magazine – if ever there was a reason for optimism, it's seeing the pictures and reading the reports you send in of fundraisers, awareness events, class projects and magical wildlife encounters. Word of mouth is powerful, and wildlife needs advocates in all walks of life and in every home, every city park and farming community, every classroom and boardroom, every pub and coffee shop, every social networking site and every corridor of power. You don't have to be an expert in all of it, just find out what you can about an issue that concerns you – the following pages are a great place to start – and then, please, go and share it.

Dr Amy-Jane Beer  
Editor *Wildlife World*



Laurie Campbell



# In this edition ...

**4 Your PTES** Our staff and supporters love getting close to wildlife, as the pictures we receive show. Why not send us yours?

**5 Frontline** We all know wildlife needs space – but how much exactly? For hedgehogs at least, we're closer to an answer.

## 6-9 NEWS

Updates from home and overseas, including upward trends for pine martens, worrying figures for grey long-eared bats, exciting news about snow leopards, and a word from our CEO Jill Nelson.

**10-11 Scrapbook** News, comment, pictures and updates from PTES-funded researchers and supporters.

## 12-15 MAIN FEATURE

### The magic of Manas

Most people have never heard of India's remote Manas valley, despite its World Heritage status. PTES is helping Pranjal Bezbarua put Manas on the map as a haven for wildlife, including endangered rhinos.

## 16-21 PTES IN ACTION

### 16-17 Saving big cats and wild dogs

Updates from a selection of our carnivore campaign projects, helping lions, cheetahs and wild dogs in Africa and snow leopards and dholes in Asia.

**CORRECTION:** On page 10 of the last edition of *Wildlife World* we captioned an image as the medicine tree *Prunus africana*. In fact the picture showed another shrub, *Casia sp.*

Make this magazine work harder...

When you've finished with this copy of *Wildlife World*, please pass it on to someone else or donate it to a waiting room collection – you might find us a new supporter!

If you've picked up this magazine and enjoyed reading about the projects that PTES funds you can support us for just £3 a month and receive two issues of *Wildlife World* every year. Please contact us at the address below for details.

people's trust for  
**endangered species**



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*The opinions expressed in this magazine are not necessarily those of People's Trust for Endangered Species.*

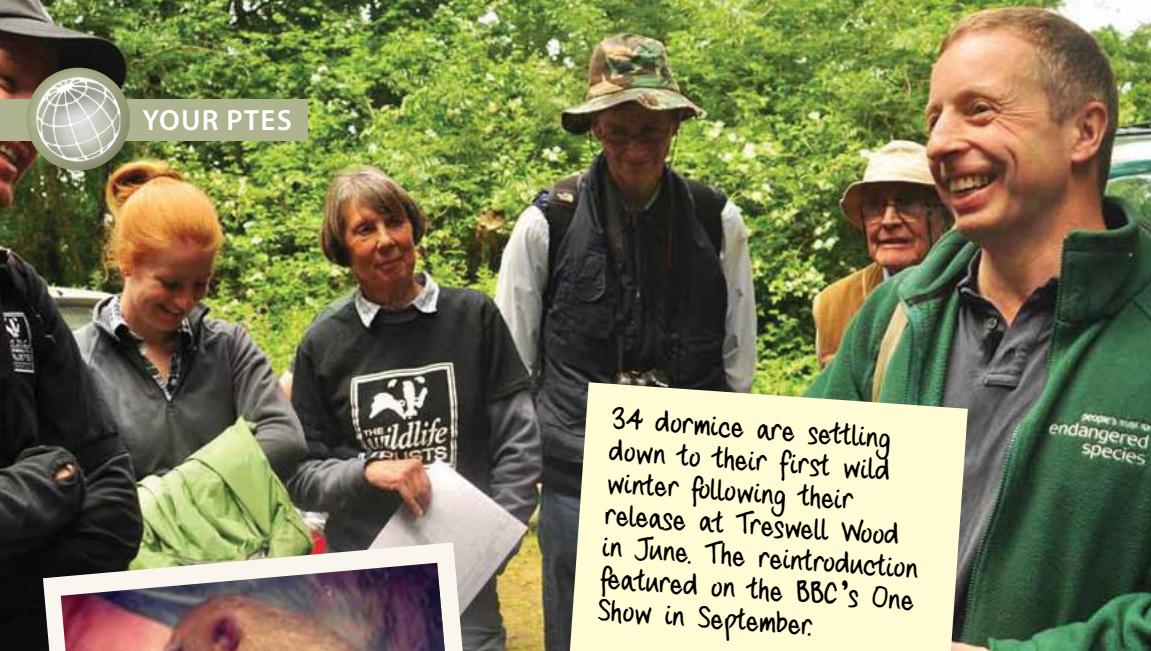


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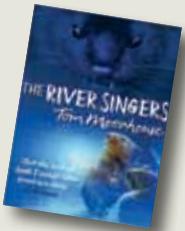
YOUR PTES



34 dormice are settling down to their first wild winter following their release at Treswell Wood in June. The reintroduction featured on the BBC's One Show in September.

## PTES likes ...

**The River Singers**  
by Tom Moorhouse  
£10.99



Ecologist and PTES research fundee Tom Moorhouse has turned his love of water voles into a novel.

Aimed at children 8 years old and up, the story is a must for bedtime in wildlife friendly households this winter.

Zoe Roden



Emily, Susan & Katherine took the PTES and Hedgehog Street show on the road this summer, visiting events including Bristol Festival of Nature and BirdFair at Rutland Water.

Meanwhile, dormouse monitoring continued at our Briddlesford reserve where some of you joined in through our Wildlife Encounters programme. 'Getting close to such beautiful animals was an experience we'll treasure for a long time to come' said event supporters Paul & Karen.

Lorna Griffiths



PTES

Grrrrr... our Saving Big Cats and Wild Dogs campaign has some fierce supporters!



For details of Wildlife Encounters, surveys and other PTES activities, visit [www.ptes.org](http://www.ptes.org) or scan the code and discover how you can join in.



PTES

**52 Wildlife Weekends: a year of British wildlife watching breaks**  
by James Lowen Brant, £14.99



A timely guide for anyone planning to see more wildlife in 2014 – practical advice on how to experience the best of wild Britain in a packed series of two-day excursions.

**CHRISTMAS SHOPPING?**  
Remember to visit our shop at [www.ptes.org/shop](http://www.ptes.org/shop) for a range of thoughtful wildlife gifts that help conserve the species you care about.

**Embodying ethics: Endangered**  
by Rohan Chhabra



There's more to designer Rohan Chhabra's range of hunting jackets than meets the eye. Each one transforms into a representation of a critically endangered species. This thought-provoking project has won acclaim for its craftsmanship and its relevant and responsive nature. Rohan's work is being exhibited at the 2013 London Design Festival and will be touring soon. Or see it at [www.rohan-chhabra.com](http://www.rohan-chhabra.com)



# Frontline

WITH A HAMMER, NAILS, A FEW PLANKS OF WOOD AND NO INKLING OF THE CONSEQUENCES, AN AFTERNOON'S WORK COULD SENTENCE A LOCAL HEDGEHOG POPULATION TO EXTINCTION. HABITAT FRAGMENTATION REALLY IS AS EASY AS THAT.

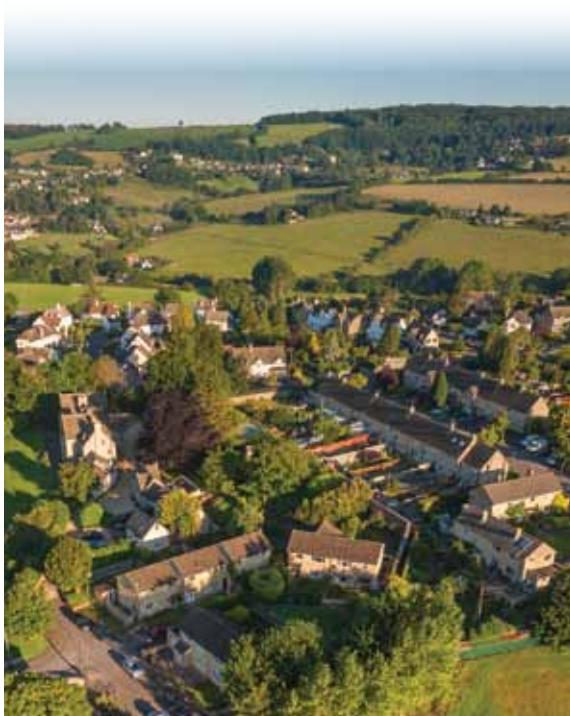
Hedgehogs are in trouble. This much has been clear since the PTES *Mammals on Roads* survey flagged up a decade of severe losses 18 months ago. Several possible factors have been implicated in the disastrous decline, from road traffic to pesticides, disease, badgers and landscape development.

The *Hedgehog Street* campaign, run by PTES and the British Hedgehog Preservation Society (BHPS) is spreading the word that back gardens are vital for hedgehogs and encouraging householders to welcome wildlife into their green spaces. We know that habitat connectivity is essential to healthy ecosystems. But in the case of hedgehogs we didn't

really know how much space was required. What kind of area does a population of hedgehogs actually need? PTES and BHPS commissioned a study by Tom Moorhouse of the University of Oxford's Wildlife Conservation Research Unit to bring us closer to an answer. Using data gleaned from several previous studies, Tom has come up with figures for the minimum viable population (MVP) for hedgehogs living in particular types of habitat. MVP is the number of individual animals required for a self-sustaining population. It assumes a sex ratio of one to one, and treats individual populations as isolated units – which means that they cannot be boosted or rescued by immigration of animals from elsewhere. Sadly, in our increasingly developed and fragmented landscape, this kind of isolation is far from theoretical. In the case of hedgehogs, it really does only take a garden fence.

MVP varies between habitats, depending on the availability of food, nest sites and other resources and on the mortality risks posed by predators, traffic and disturbance. Given all this, Tom's conclusions were that in locations with plenty of food and shelter and a low predation risk, such as a run of suburban gardens, MVP might be around 32–60 individuals.

In areas with higher predation risk, less shelter and fewer food resources, a population might need as many as 120–250 animals to stand a reasonable chance long



term. Perhaps counter-intuitively, conditions in the wider countryside are more likely to lead to high mortality and greater annual variation in breeding success, and so the relevant values of MVP are higher in rural areas than built up ones. Because typical hedgehog densities in various habitat types are known, it was possible for Tom to estimate the area required to sustain MVPs in different habitat types. The results were startling. Even in the resource-rich hedgehog utopia of suburbia, it takes between 0.9 and 2.4 km<sup>2</sup>, of continuous, connected habitat to support a viable population. This is a huge area, and it makes clear that preserving hedgehogs really is a neighbourhood-scale affair. An odd hedgehog-friendly garden here or there simply isn't enough. For

rural populations, where the challenges and risks are higher, the area needed is estimated at between 3.8 and 57 km<sup>2</sup>. Of course in the countryside, land tends not to be parcelled into so many tiny lots as in the suburbs, but large areas of land are much more likely to be within the control of a few people – local councils, farmers, golf clubs and large landowners really do have it in their power to make a difference to the survival of a species by managing with hedgehogs in mind. For the rest of us, all this is just more evidence that saving the animal recently voted in a poll by *BBC Wildlife* magazine as Britain's best loved species has to be a team effort. What you do, and who you share your passion for wildlife with, really does matter. So speak out. Share what you know with anyone who'll listen. None of us can save hedgehogs alone.

This important work relied on years of diligent counting. Population monitoring is a vital component of conservation research. While it might not be glamorous, it provides the raw data for powerful statistics. A large proportion of PTES-funded research includes an element of monitoring, some of it on a grand scale. But small counts are useful too. Thank you to everyone who has helped gather this data. And if you fancy a go, check out our guide to wildlife counting methods in the DIY feature on pages 22 and 23.



**Dr Amy-Jane Beer** is a biologist, a freelance writer and editor and a lifelong lover of wild places and wild things. [www.wildstory.co.uk](http://www.wildstory.co.uk)





### GARDEN WILDLIFE HEALTH

Dave Bevan

## New project tracks wildlife disease

Garden Wildlife Health (GWH) is a new initiative that aims to identify and investigate disease threats to British garden wildlife, focusing on birds, amphibians, reptiles and hedgehogs. The project is a collaboration between the Zoological Society of London (ZSL), the British Trust for Ornithology (BTO) Froglife, and the RSPB, and funded by Defra and the Esmée Fairbairn Foundation. Working with a range of universities, governmental agencies, and conservation organisations, including PTES and the British Hedgehog Preservation Society, GWH will investigate whether infectious or non-infectious disease is implicated in worrying trends such as the decline in Britain's hedgehog population. Hedgehogs are known to suffer from lungworm, ringworm and salmonellosis, but the spread and

impact of these and other diseases is not fully known.

Visitors to the new GWH website will be able to register and report incidences of disease in their garden. Factsheets will help you recognise symptoms and reports will contribute to a national database. In addition, if a freshly dead hedgehog, bird, reptile or amphibian is found, it can be made available to the wildlife vets at ZSL who may then conduct a post-mortem examination. Results and any advice will be relayed to the submitter.

For more information please visit [www.gardenwildlifehealth.org](http://www.gardenwildlifehealth.org)



Zoological Society of London

*Post mortem examinations will help build a clearer picture of the problems facing garden hedgehogs.*

### MAMONET WALES PROJECT

MaMoNet Wales is a new project from The Mammal Society, Wales Mammal Group and Natural Resources Wales, aiming to develop a Welsh mammal monitoring network and bring together people working for mammal research and conservation. Hedgehogs

and harvest mice will be receiving particular attention and Project Officer Becky Clews-Roberts is asking for your help. To get involved yourself, or to follow the project's progress, search for MaMoNetWalesProject on either Twitter or Facebook.



*Making wildlife welcome in a domestic garden can boost local populations. It also provides a valuable opportunity to monitor the health of several key species.*

### GREY LONG-EARED BATS

## Bats in crisis

A conservation management plan published by the Bat Conservation Trust (BCT) reports dangerously low numbers of grey long-eared bats in Britain and recommends the species be urgently awarded UK Priority Species status. It was hoped that research by Orly Razgour of the University of Bristol would show that grey long-eareds were actually more common than previously thought, but sadly her findings confirmed how very rare the species is. The population of grey long-eared bats in the UK is estimated at 1 000 animals, confined to small pockets along the south coast of England, with a small number in the Channel Islands and a single record from South Wales.

According to Dr Razgour, the decline is likely to be linked to the loss of lowland meadows and marshlands, the bat's main foraging habitats. Grey long-eareds prey on agricultural pests, making them valuable to farmers. Originally cave-dwellers, they have become dependent on buildings for roost sites. They need large, open spaces in lofts and barns, close to foraging habitat. These roosts are under threat from building development, and better protection is required. The plan also calls for legislation

for bats in the Channel Islands, which are independent of UK law. Only Jersey currently offers legal protection to bats and their roosts. BCT hopes the other Channel Islands will soon follow suit.

The full report *Conserving grey long-eared bats (*Plecotus austriacus*) in our landscape:*

*a conservation management plan* is available to download at [www.bats.org.uk](http://www.bats.org.uk)



*Current distribution of grey long-eared bats in Britain.*



## PINE MARTENS

iStockphoto.com/GlobalP

Pine martens are showing encouraging signs of recovery in Scotland. A joint survey by Scottish Natural Heritage (SNH) and The Vincent Wildlife Trust (VWT) published earlier this year shows the population has regained ground across much of central Scotland, re-colonising areas from which it has been absent for more than a century.

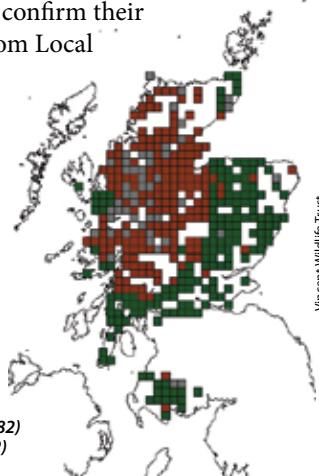
'At a time when some native mammals are declining it's fantastic to see pine martens recovering and expanding their range. They are still absent from much of Britain so the recovery in Scotland is significant,' said Lizzie Croose, VWT's survey coordinator.

The first signs of this gradual recovery were recorded in surveys in the 1980s and 1990s, and the picture continues to improve. The latest data was gathered last summer when surveyors collected scats on transects along woodland tracks

## Range expansion for Scottish martens

and paths. These were DNA-tested to confirm their origin. Records were also collected from Local Biological Record Centres and other wildlife organisations. The results show that pine martens are now present in Caithness, Moray, much of Perth and Kinross, Aberdeenshire and Angus and parts of Fife. They have also moved south into southern Argyll, the Trossachs, much of Stirlingshire and some parts of the central belt.

*The recently updated pine marten range map for Scotland shows previously known range in grey (1982) and brown (1994); and newly identified range (2012) in green. Each square is one hectad (10 by 10 km).*



Vincent Wildlife Trust

## OTTERS & EELS

Laurie Campbell

## Fish suppers aren't what they used to be



Britain's resurgent otter population has been making good news headlines for three decades. But the recovery is fragile – otters are dependent on a specialist diet of fish, amphibians and aquatic invertebrates, and changes in their prey base could lead all too quickly to a renewed decline. Current information on the diet of otters is thus very important, especially in the context of catastrophic declines of one of their main food sources, the European eel (*Anguilla anguilla*).

With the aid of a PTES internship and using a previous study as a historical guideline, Heather Beaton has used spraint analysis

to detect changes in the diet of Scottish otters over the past 30 years. Results show that the proportion of eels being eaten has declined significantly while other prey types including salmon, perch, three-spined stickleback, amphibians and birds have increased. Eel declines are thought to be in the early stages in Scotland, and these findings suggest that continued monitoring of otter diet may be important in coming years, not only in alerting conservationists to possible negative impacts on otter populations, but also as an indicator of the relative abundance of eels and other aquatic species.

## The state we're in

PTES was proud to be one of 25 contributors to the *State of Nature* report, a landmark health check of nature in the UK and its overseas territories launched earlier this year.

Among the key findings were that 60% of 3 148 UK species have declined over the last 50 years, 31% strongly. A Watchlist Indicator, developed to monitor priority species, shows that overall numbers have declined by 77% in 40 years, with little sign of recovery. Of more than 6 000 species assessed using Red List criteria, more than one in 10 are under threat of extinction in the UK. It seems clear that species with specific habitat requirements are faring worse than generalists, and that climate change is making its mark on our wildlife. The report also highlighted the importance of UK overseas territories, which are home to more than 90 species at high risk of global extinction.

Overall, there is a lack of knowledge on the trends of most of our wildlife, with quantitative data available for only 5% of our 59 000 or so terrestrial and freshwater species, and very few of our 8 500 marine species. The threats to UK wildlife are many and varied, the most severe acting either to destroy habitat or degrade the quality and value of what remains.

The report makes grim reading, but also illustrates that with shared resolve and commitment we can save nature. Special mention is made of the efforts of volunteer enthusiasts who contribute time and expertise to vital monitoring schemes and species recording, so please keep up the good work – you are making a real difference.



*The State of Nature report was launched by Sir David Attenborough.*

**Read the full report online at [www.rspb.org.uk/stateofnature](http://www.rspb.org.uk/stateofnature)**

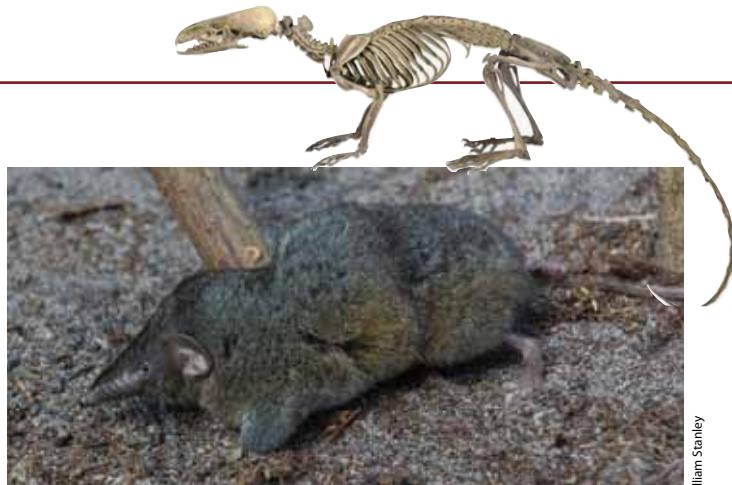
## HERO SHREWS

# New species of shrew is a force to be reckoned with

African hero shrews were first described over a century ago. This small insectivore has extraordinary strength and in its native Congo, body parts are worn as battle talismans in the hope that they will confer invincibility.

Now a team lead by Bill Stanley at the Field Museum of Chicago have discovered a second species, which they have named *Scutisorex thorii*. The full description is published in the Royal Society journal *Biology Letters*.

Hero shrews owe their great strength to unique interlocking vertebrae. There are twice as many lower vertebrae as in a human backbone and relative to body size, the overall structure is about four times as strong. In the new species, there are fewer lower vertebrae and the ribs are more robust. This leads the authors to speculate that the



William Stanley

new shrew may represent a transitional form, or 'missing link', between conventional shrews and the hero variety. Bill Stanley said: 'We hypothesise that this shrew – with its expanded backbone and associated musculature – can crawl in between the trunk and leaf bases of trees to access concentrated food resources. The same mechanism could be used for getting under logs or rocks which they could lift out of the way.'

## SNOW LEOPARDS

# Snow leopards: encouraging range and breeding news

Our friends at the Snow Leopard Trust (SLT) recently announced the exciting news that their team in Pakistan has found a previously undocumented population of at least four wild snow leopards in a remote corner of the country. Misgar Valley, close to the Chinese border, was once part of the Silk Road and one of the last outposts of the British Empire. It also borders Afghanistan, so it's a sensitive region

but, for the team, it was weather (floods, snow, mudslides) rather than politics that made surveying the region so difficult.

Nevertheless the effort has proved well worthwhile and camera traps set in May and June recorded snow leopards at 19 sites. After evaluating coat patterns, SLT have been able to identify at least four individual cats. The cameras also recorded brown bears, red foxes, stone martens, and ibex.

Surveys in the local communities have found generally negative attitudes towards snow leopards among local herders, who fear livestock depredation, so SLT is joining with PTES in working to address these conflicts.

Misgar families seem interested in a livestock insurance programme (see also Dholes p17), and SLT hopes to initiate a pilot scheme soon.

Meanwhile

there was more good news from SLT's Mongolian arm, where researchers caught a rare glimpse of the first days in the life of a cub. Finding a wild snow leopard cub in its den is rare and exciting – the first ever such encounter took place only last year. But this latest discovery could be particularly significant, as the team believe they know not only the cub's mother, a cat called Agnes, but possibly its father as well, a male named Ariun. Both adult cats were tracked with GPS collars for several months before the birth. 'Very little is known about the role of snow leopard fathers in the wild,' says Gustaf Samuelius. 'Being able to monitor both parents could yield exciting new insights.'

*The new wild snow leopard cub is one of very few ever recorded while still in the den. It's an exciting opportunity for big cat research.*



Reinhard / ARCO; inset SLT

# NELSON's COLUMN

## Hoping for harmony

By the time you read this, the trial cull of badgers will be over and we won't have to listen to Owen Paterson going on about having a pet badger as a boy – a case of 'some of my best friends are black and white'? More livestock will have perished meanwhile and we won't be any further forward. So much for the science.



These pages are sadly full of conflict between animals and humans and, on an increasingly crowded planet, it's no surprise. But there is hope. We are inspired by stories where people have found an accommodation with their wild neighbours. The young tribal warriors in Tanzania learning to guard lions instead of killing them, and the farmers in Sumatra using bamboo canons as scarecrows to deter orangutans from their fruit crops, show how humans and animals can reach an equilibrium.

Taking human/animal harmony a step further, we have created a 'wild' new twinning scheme to raise funds. If you have a pet dog or cat, how about twinning them with their wild counterpart? Or, if you don't have a pet, what about twinning someone else's companion as a truly unique seasonal gift? Our dogs and cats can do their bit for their threatened cousins! Full details can be found at [www.savingcatsanddogs.org](http://www.savingcatsanddogs.org)

All best wishes

Jill Nelson, Chief Executive, PTES

## SEAHORSES

### Seahorse conservation goes digital



PTES grant recipients at Project Seahorse have just launched a new digital tool for seahorse science and conservation.

The new iPhone app and website *iSeahorse* will harness the power of citizen scientists to improve our understanding of seahorses all over the world and protect them from overfishing and other threats. Anyone, anywhere in the world who sees a seahorse in the wild can join *iSeahorse* and contribute data. The Seahorse Project is keen to recruit divers, anglers, scientists, seahorse enthusiasts and anyone about to head off on a beach holiday. The app can be used to upload photos and observations

to *iSeahorse*, to identify seahorse species and to advocate their protection in ocean neighbourhoods around the globe.

Scientists from Project Seahorse and seahorse experts around the world hope to use the information gathered to better understand seahorse behaviour, species ranges, and the threats seahorses face.

*iSeahorse* aims to be more than just a website and an iPhone app. It's a community of citizen scientists and conservationists with a common goal: to protect seahorses and increase scientific knowledge of these mysterious and beautiful animals. To find out more visit [www.seahorse.org](http://www.seahorse.org) or download the app for free from the iTunes store.



Project Seahorse: Inset: Jap Van Duivenbode

## RAFFLE WINNERS

Thank you to everyone who sold and bought raffle tickets to raise funds for our *Saving Big Cats and Wild Dogs* campaign. The top prize of £1 000 was won by Mr Prandy of Gwent. Mrs Tucker of Northamptonshire and Mrs Smith of Norfolk won limited edition prints by artist Gary Hodges; Mrs Morrison of the Channel Islands and Ms Sudlow won limited edition photographic prints by Iain Green; Mr Pratt of Leicestershire won a woodland cushion by designer Alexia Claire and Ethical Superstore vouchers were won by Mrs Knight of Gloucestershire and Mr Lauder of Oxfordshire.

**saving**  
BIG CATS AND  
DOGS

# SCRaP Book

Whether you're a supporter of PTES, a volunteer, or one of our funding recipients, we love to hear from you. Keep us posted on your experiences and projects, and don't forget to send pictures!

It was lovely to hear from PTES intern Tara Curry recently. Tara spent her internship working with one of the UK's most enigmatic mammals, the pine marten.

I had an incredible time during my internship. I met and worked with some great people, and each day brought a new wildlife encounter. Even though the pine marten is an elusive creature, we managed to spot one on only my second evening! I hope to continue working in conservation zoology, and believe the internship has given me the experience needed to do so.



The spirit of big cat conservation is burning bright in Iran. Arezoo Sanei of the Asian Leopard Specialist Society recently showed us a video

clip about an ordinary farmer's extraordinary encounter and how his actions saved a wild Persian leopard. You can watch too at [http://www.youtube.com/watch?v=I1p\\_najmsAo](http://www.youtube.com/watch?v=I1p_najmsAo)



One of a wonderful collection of dormouse collages made by children joining our school farm day on the Isle of Wight this summer.



PTES has its own YouTube channel. Visit [www.youtube.com/pteswildlifevideos](http://www.youtube.com/pteswildlifevideos) to see information videos, project footage and supporter's own wildlife movie clips.



Frankie Lees #savingcatsanddogs  
@PTES Thanks for my collar tag!  
I'm only allowed to wear it indoors for show so I won't lose it :) love Kiki the cat  
- @Hellofrankie21



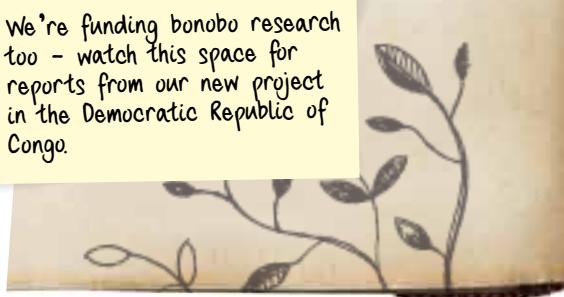
## PUBLICATIONS

Simon Jones, Derek Gow, Adrian Lloyd Jones and Róisín Campbell-Palmer recently published an excellent overview of the long-running effort to restore beavers to the UK. See *The battle for British beavers*, *British Wildlife* **24** (6) August 2013

German Forero-Medina wrote with news of two recent papers to come out of PTES funded research on Dahl's toad-headed turtle. See *Herpetological Conservation and Biology* **7**(2): 313–322, Dec 2012 and *Chelonian Conservation and Biology* **10** (2) 228–236, Dec 2011



We're funding bonobo research too - watch this space for reports from our new project in the Democratic Republic of Congo.



Jane Bolton wrote to tell us about the wonderful PTES-inspired activites going on at **Longney School** in Gloucestershire. The school is twinned with a Tanzanian school through *Kids4Cats* (see p16), and has raised £500 to support Nicko, a Tanzanian boy, with a Ruaha Carnivore Project *Simba Scholarship*. As if that wasn't enough they have also formed a hedgehog club to raise awareness in the local area through *Hedgehog Street* activities and raised £230 for Help a Hedgehog Hospital in Stroud. Brilliant work, well done!



1Stockphoto.com/teetuey



We're all fans of hedgehogs at PTES, but even we never realised they had such good taste in reading material...

PTES supporters are an imaginative and resourceful bunch. Thank you for all your fundraising efforts recently, including Berkshire College of Agriculture's Lambing Weekend, Moreton Hall School Eco Club's hedgehog project, Weybridge Pet Centre's charity box and Maidenhead Duck Derby for great support once again.



## Meet the team....

PTES is run by 13 dedicated members of staff, guided by a board of five trustees. This time, meet Nida and Zoe who, in addition to their main roles, also help bring you this magazine.

### Nida Al Fulaij Development Manager

After a childhood chasing rabbits and collecting anything inert enough to be caught – mushrooms, shells, caterpillars – Nida knew a career in natural history was for her. She completed a BSc in Environmental Science and Anthropology at Oxford Brookes University, then moved to London to volunteer at the Dian Fossey Gorilla Fund. Two years later, she began work at PTES, where her role evolved from marketing to fundraising and then to managing the grants programme. Her job has seen her tackle everything from leopard tracking in Armenia to teaching London park rangers how to create habitat for stag beetles.



### Zoe Roden Publications and Events Officer



After finishing a degree in Zoology at Sheffield University, Zoe knew she didn't want more time in a lab; she wanted to share her passion for the natural world. After two years in the marketing department at London Zoo she moved to PTES and has held several roles in the 11 years since. You may have met her on one of our *Wildlife Encounters* and she is also responsible for designing and editing many of our publications. Outside work, Zoe enjoys concerts, cooking and convincing her five year-old daughter that insects aren't scary.

**MarkAvery #stateofnature**  
@ptes Belated 'well done!' for getting together with everyone else for SoN report.  
More joint working plz  
- @MarkAvery

**Mike Dilger #dormice**  
@PTES loved the day & PTES's dedication to the small, gorgeous furry critter cause.  
Keep up the good work & fingers crossed for litters!  
- @DilgerTV

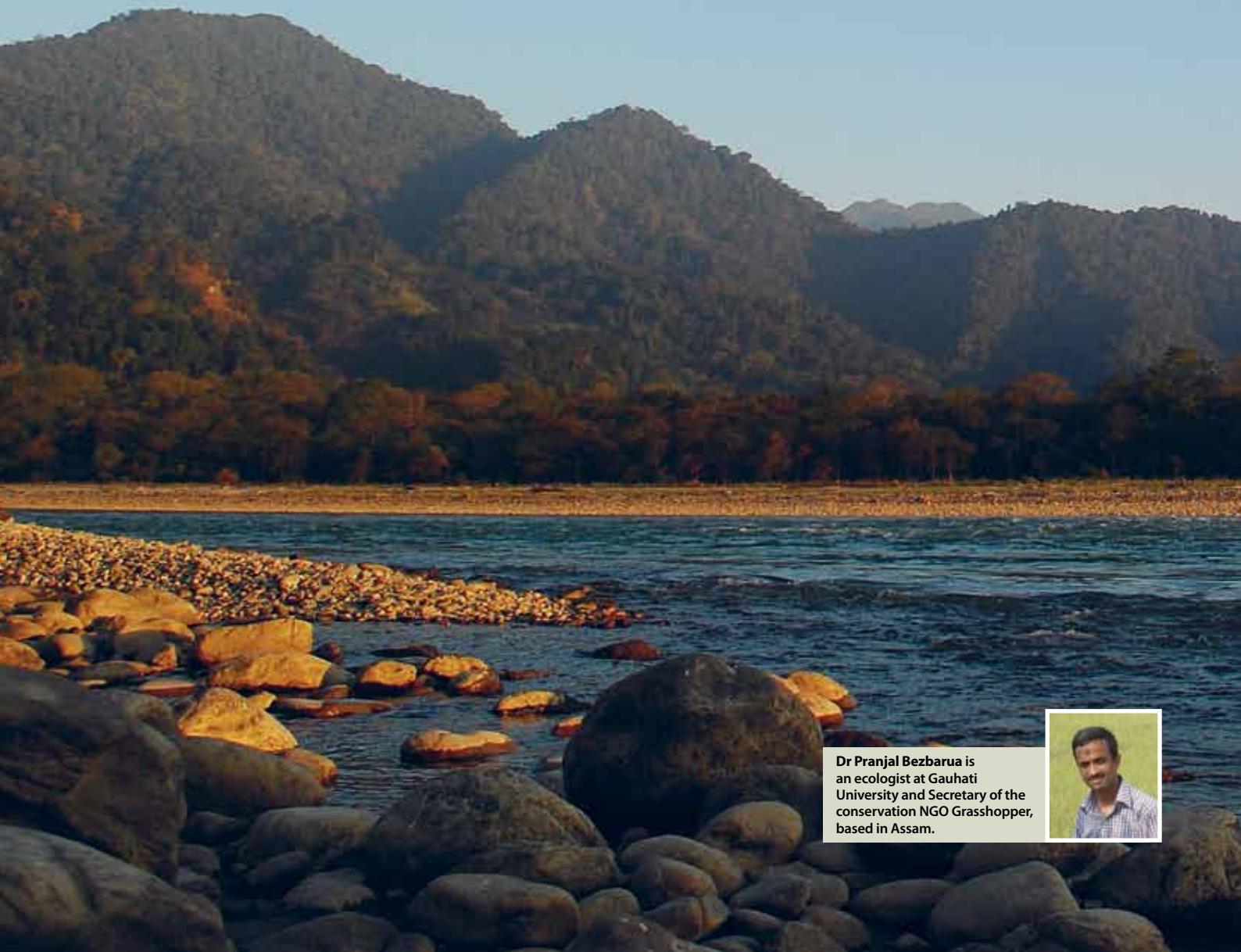


Inspired by our DIY feature last year, supporter Alison Pelikan built this truly magnificent bug hotel!



AT THE TURN OF THE MILLENNIUM, ONE-HORNED RHINOS IN ASSAM FACED SEEMINGLY INSURMOUNTABLE ODDS. BUT CONSERVATIONISTS MUST BELIEVE THAT ANYTHING IS POSSIBLE. GUNS CAN BE REPLACED WITH LOOMS, POACHERS CAN BECOME PROTECTORS AND MIRACLES CAN HAPPEN. **PRANJAL BEZBARUA** CALLS IT THE

# Magic *of Manas*



Dr Pranjali Bezbarua is an ecologist at Gauhati University and Secretary of the conservation NGO Grasshopper, based in Assam.





MANAS! The word has long had mystic connotations for me. This great tributary of the Bramaputra, which marks the remote Indo-Bhutan border for some of its length, flows from blue hills through green forest. But despite recognition of the region's unique beauty and immense ecological value, and several layers of statutory protection, this magical landscape is also a troubled one. Political unrest began in the late eighties with demands from the local Bodo people for more autonomy. Forest mafias took the opportunity to destroy infrastructure and the unrest

has taken a terrible toll on wildlife including rhinos, elephants and tigers. In

1992 UNESCO was compelled to list the area as a world heritage site in danger.

When my chance came to explore Manas tiger reserve in December 1999, I was excited; but my guide and mentor, Prof. C. K Baruah of Gauhati University was worried, as were my parents and friends including officials at the Ministry of Environment and Forests for the Government of India. The political crisis was ongoing, and Manas was used as a corridor by a variety of insurgent groups. Even so, beginning fieldwork felt like a childhood dream come true, and I fell increasingly under the spell of this wild, beautiful place and its people. I learned a great deal about the area, its biodiversity and the complex socioeconomic and political situation from local teachers, students, villagers and forest staff. And the stories they can tell of Manas and its wildlife! One day I met a forester honoured with a President Medal for fighting off a tiger to save his colleague. I soon put my faith in these

**'One species was notably absent.  
Not once in those early years did  
I see a single sign of rhino.'**

brave people, and felt safe as I spent days and nights walking through thick grassland and forests encountering wild buffaloes, elephants, bisons, hog deer, golden langurs and even a royal Bengal tiger. But one species was notably absent. Not once in those early years did I see a single sign of rhino.

Historically, the greater Indian one-horned rhinoceros existed across the entire *terai* – the zone of marshy grassland and forest extending south of the Himalayas from Pakistan across parts of Nepal, Bangladesh and Bhutan

to the Indian-Burmese border. But the species has been in steady decline since

the 1600s and, by the beginning of the 21st century it teetered on the brink of extinction thanks to continued poaching and habitat shrinkage. Rhinos had disappeared from most of their former range states and were hanging on in just a few localities in Nepal and India. In 2005, about 80% of the total world population of around 2000 animals were thought to live in protected areas of Assam.

### Hard times

During my fieldwork, I saw first-hand the pathetic condition of villagers as they collected fuel wood, foraged for vegetables or fished in the Manas. It was little wonder some of them turned to illegal logging and poaching to keep their families. The forest mafias exploited these people, taking advantage of inadequate law enforcement. Most shocking to me was to see young children following the example of their parents and killing small wildlife such as birds, bats or small animals. The lack of educational infrastructure helped steer them towards poaching or other illegal or anti-social activities.

Before the insurgency began, the total rhino population of Manas hovered at around 100 but, by the turn of the century, everybody believed they had been wiped out. Other sanctuaries, including those at Laokhowa and Burachapor and the Kurua protected forest had also lost their rhinos. But in February 2001, we received a call saying that a rhino had been poached at Kokilabari, on the eastern boundary of the Manas National Park. When forest

## FACT FILE: Manas, Assam

**Protected areas:** Manas Tiger Reserve 2837 km<sup>2</sup>; Manas National Park 500 km<sup>2</sup>; Manas World Heritage Site 391 km<sup>2</sup>  
**Reasons for protection:** Biodiversity hotspot, exceptional natural beauty  
**Special species:** One-horned rhino, golden langur, Asiatic elephant, royal Bengal tiger, pygmy hog  
**Threats (historic and current):** Poaching, insurgency, illegal logging and forest exploitation, human encroachment



Siddhartha Gogoi; Paul Sterry/NPL

# BUILDING A MIRACLE

Pranjal Bezbarua/Grassopper

1. Persuade poachers to surrender their weapons



2. Train forest dependants in new skills, such as weaving

3. Inspire the conservationists of the future



staff visited the location, they found only bloodstains and skin – the meat had been taken by villagers after poachers had killed the animal and removed its horn. Whilst shocking, this incident did give us hope that a few rhino might exist in the nearby Bhutan hills. On a previous visit to Kokilabari, we had found it severely disturbed and had expected the remaining habitat to be lost altogether to human settlement. So finding even a dead rhino here was cause for hope, and local action began to be taken.

In 2004, Abhijit Rabha the field director of the national park accompanied me on a rare and risky trip through Manas, following the Indo-Bhutan border from west to east. We wanted to see if we could find any sign

of rhinos. After a 14-hour journey by elephant, and some nervous encounters with forest mafia, we reached Kokilabari where a new community-based NGO greeted us. The NGO was helping turn poachers into conservationists. Abhijit Rabha was even able to report a glimpse of a sub-adult rhino on the Indo-Bhutan border during that trip. These encouraging signs and the direct participation of the community in conservation were inspiring, and enough to convince the Forest Department of Assam that rhinos had a future in Manas. Thus a plan was hatched to save the last population of the Indo-Bhutan valley by reintroducing animals from elsewhere.

But where could the rhinos come

from? Actually, this was easy. While most sanctuaries had lost their rhinos during the political turmoil of 1980–2001, two reserves had beaten the odds and maintained flourishing populations. The rhinos at Kaziranga National Park in central Assam have been closely protected since 1905, and the population there had grown from a few dozen to more than 1900. In 2001, Kaziranga was home to 93% of the remaining Assam rhino population. This represented an extreme stochastic risk – which is to say far too many precious eggs were in one basket. Our second source was the tiny Pabitora Wildlife Sanctuary, south of Manas, whose population far exceeded the natural carrying capacity of the land.

In 2005 we began a carefully designed rhino reintroduction and conservation programme involving the Forest Department, state and federal governments and several regional, national and international NGOs and institutes. The aim was to increase the overall rhino population of Assam from 2000 to 3000 and to expand the species' distribution from three to six protected areas by 2020. At Manas we were given the task of finding suitable habitat and establishing a long-term rhino-friendly environment before any rhinos arrived.

We began working with the communities, winning trust and helping people make the first steps towards rejecting poaching and embracing conservation. By engaging with former poachers I had come to understand some of the problems faced by forest dependants and I knew how easy it was for surrendered poachers to slip back into their old ways due to poverty and lack of alternative livelihood options.





#### 4. Identify suitable rhino habitat



#### 5. Reintroduce and monitor rhinos



#### 6. Restore more grassland habitat



#### 7. Strengthen community fencing & anti-poaching measures

We wanted to offer them new skills that would help them live a decent life and allow their children to go to school. We had very limited resources to achieve all this, so we were delighted when PTES came forward to help.

PTES helped fund our local NGO, Grasshopper, which engaged the community in conservation through awareness campaigning and rehabilitation of ex-poachers and forest dependants. Small things made a big difference. The distribution of 20 schoolbags amongst the children of forest dependants and a community literary event really helped spread the word about the need to educate children and the value of nature. For 20 families of poachers and forest dependants we offered training in pig-farming, horticulture and weaving. We were able to document a gradual change in behaviour and a 30-40% increase in economic activity. We arranged awareness campaigns in fringe villages around Manas and more community-based NGOs were formed to persuade poachers and forest dependants there of the importance of conservation.

#### The rhinos return

Meanwhile, also with funding from PTES, we had been able to identify likely looking areas for releasing translocated rhinos using satellite images and ground surveys. In 2006, the Forest Department of Assam undertook a trial reintroduction of a hand-reared rhino calf from Kaziranga to a fenced grassland in Manas. This youngster was joined by a further two calves the following year. In 2008, the forest

authority of Assam introduced two wild rhinos from Pabitora to Manas. Volunteers joined forest staff in offering protection to the new arrivals and more poachers surrendered and joined in with conservation activities.

Thus the first phase of the work was accomplished. It took strong community support and advanced technology, but the results were there to be seen – restored habitat and rhinos back where they belonged. PTES arranged two *Wildlife Encounter* trips to see the progress we had made, and these visits helped us to promote further eco-tourism and raise funds to support 80 more volunteers.

By 2011, there were 22 translocated rhinos in Manas and UNESCO removed the danger tag they had placed on the world heritage site. Today the total is 26, and five new calves have been born in the reserve in the last two years.

#### The way ahead

Much remains to be done. The five rhino births have been matched by losses to poaching since 2011. Poaching is on the increase globally, and traders use increasingly sophisticated techniques to hide their crimes. Insurgent organisations are often involved. Furthermore, we have found that our translocated rhinos sometimes stray beyond protected areas. We have therefore identified a buffer area around Manas in which we are strengthening security. The next phase of our work, also funded by PTES, is to evaluate the

level of threat using rapid socioeconomic surveys, and to implement community conservation activities, habitat restoration projects and other practical steps to safeguard the rhino population. We have supplied eco-friendly anti-poaching equipment such as solar torches and lamps to help ground forest staff with night patrols. We are mapping rhino straying patterns in order to target anti-poaching operations in the most appropriate areas.

We are also working to restore more habitat, converting encroached areas and improving drainage so that grassland can establish. We are preparing a booklet on one-horned rhinoceros and supplying information on alternative livelihood options as part of a new awareness drive in other protected areas of Assam such as Kaziranga and Orang Pabitora.

While phase one of our project benefitted around 200 families, we are now working with 300 more. With your support, we continue to develop what we call ‘community fencing’ – a local culture that opposes poaching operations and will ultimately help establish a viable population of one-horned rhinoceros in Manas tiger reserve.

We have shown that it is possible for the tribal communities of Manas to be sustained on traditional cultural lines while safeguarding the future of rhinos and other elements of biodiversity. For the Bodo people, for the one-horned rhinoceros and for all our children, I hope it will be so.

PTES SUPPORTERS ARE RESPONDING BRILLIANTLY TO OUR CAMPAIGN FOR BIG CATS AND WILD DOGS, AND WE ARE NOW FUNDING WORK ON PERSIAN AND SNOW LEOPARDS, CHEETAHS, AFRICAN WILD DOGS, DHOLES, ETHIOPIAN WOLVES AND LIONS. THESE SPECIES ARE OFTEN ECOLOGICAL LYNCHPINNS OF ENTIRE LANDSCAPES, BUT THEY SUFFER IN AGE-OLD CONFLICTS BETWEEN HUMANS AND WILDLIFE.

## Resolving human-lion conflict in rural African communities

### TARANGIRE LION PROJECT

Lions have declined dramatically over the past century due to human population increases and habitat fragmentation, and human-lion conflict has reached unprecedented levels in many rural African ecosystems. These conflicts devastate communities living amongst wildlife. Human-lion conflict in the form of livestock predation contributes to significant economic loss as well as causing injury and loss of human life. People retaliate by killing lions indiscriminately. Such conflicts contribute significantly to the decline of large carnivore populations across Africa.

The Tarangire Lion Project (TLP) in the Maasai steppe of Northern Tanzania is collecting data on the ecology, demography and movement of lions, in addition to information on the impact,

extent and distribution of human-lion conflicts in the region. The project is running a database with information on pride size and composition, births, deaths and health status of the lions as well as the movement by different prides. This is helping us understand the short- and long-term status of lions in this area, and making it possible to quickly identify trends within the local population, and thus to recognise the effects of disease outbreaks or other factors such as drought.

The TLP is also working to understand and improve the ecological and conservation status of Maasai lions, and collaborating with local pastoralist communities to reduce the conflict that naturally occurs when lions attack livestock. We have helped to install more than 188 chain-link security fences around grazing land, helping reduce livestock losses and subsequent retaliatory killing of lions. By monitoring the movement patterns of lions, the TLP has also successfully identified conflict hotspots where livestock are most likely to be attacked, and is using community game scouts to pass this information on to livestock herders so that they can avoid using these high risk areas.



BERNARD KISSUI

### RUAHA CARNIVORES



Amy Dickman, of Oxford University's WildCRU, sends news from the Ruaha Carnivore Project (RCP) in Tanzania. Ruaha is home to 10% of remaining wild lions, about 200 cheetahs, and vital populations of African wild dogs, leopards and spotted hyenas.

RCP was established in 2009, but new funding from PTES has had dramatic results. Human-carnivore conflict is a major challenge in Ruaha. Traditional hunting by local Barabaig people was a major factor reducing lion numbers. The appointment of five young Barabaig warriors as lion guardians to alert people to lion presence and help repair of livestock enclosures, has transformed attitudes in a community previously resistant to interference from outsiders.

Six Simba Scholarships have been awarded for local children to attend secondary school, demonstrating a tangible benefit linked with the presence of lions. The RCP *Kids 4 Cats* sister school scheme pairs schools in more developed countries with those in villages around Ruaha. PTES has helped identify schools to twin within the UK.

Despite the significance of the landscape, there has been little research on Ruaha's wildlife so the team is working with the Tanzanian authorities and tour operators to collect data on carnivore interactions. 8 027 camera trap images have revealed 43 wild mammal species including 22 carnivores. Future plans include introducing stock guard dogs and a domestic dog vaccination scheme to prevent diseases passing to wild counterparts.

JACK GRAY

# Maps to save snow leopards

## SNOW LEOPARDS

Four years ago, I showed rural herders from 26 different communities in Mongolia's Western Provinces a map of their homelands and asked them to circle areas where they had seen snow leopards. Today, all those areas are protected.

With support from PTES, the Snow Leopard Conservation Foundation (SLCF) is putting the power of conservation in the hands of local people. Mongolia has the second largest snow leopard population in the world and these great cats are thought of as guardians of our sacred mountains. Despite this high regard, snow leopards face many threats, including persecution and rapid development of prime habitat.

Over the course of two years, we painstakingly worked with herders to demarcate – by hand and electronically – the boundaries of all 26 communities, including pastures, water sources, and sacred landmarks – something that has never been accomplished before.



Each map represents not only the lands herders actively use, but the areas where they are taking responsibility to prevent poaching and protect snow leopard habitat.

Full community engagement is vital in safeguarding snow leopards. Using the new maps, community leaders can see all the households that need to be engaged in snow leopard conservation and reach out to them on a regular basis. This may prevent tragic losses such as the male snow leopard killed in 2009 by a herder protecting his livestock.

We are also helping to tackle larger threats. In 2010 we discovered that mining licenses had been issued for a mountain range inhabited by over a dozen snow leopards. With a further grant from PTES, we are now helping villages empowered by the newly created maps to legally register their lands as 'Community Responsible Areas' (CRAs). This state-recognised status secures the land for conservation across generations.



CRAs also give communities a stronger voice in development issues, so they can stand firm against damaging land uses, such

as unsustainable mining. We are helping communities develop official management plans for their CRAs and training villagers to assist with wildlife monitoring. Already, 16 communities have successfully acquired their CRA status and pretty soon we hope to see all 26 achieve the same. Our grateful thanks to PTES supporters for making this work possible, and for helping create these grassroots oases of protection for snow leopards.

BAYARJARGAL AGVAANTSEREN

Ambika Katiwada

# Coming to terms with Kangchenjunga's wild dogs

## DHOLES

Dholes are one of the least known large carnivores. Despite being able to exploit habitats as diverse as tropical forests and freezing mountains, fewer than 2500 mature dholes survive, and the decline continues due to persecution, loss of habitat and prey and disease transfer from feral dogs.

Our work in the Kangchenjunga Conservation Area (KCA) in north eastern Nepal began in 2010. KCA is strategically important, connecting Singalila National Park in India with China's Qomolangma National Park, and offering precious opportunities for trans-border conservation. Local people have long experience of livestock depredation by dholes but the species is little known scientifically. We set out to confirm the presence of dholes in KCA using camera traps, then started to collect baseline ecological data

and began raising awareness of their importance and vulnerability.

Human-dhole conflict is a major issue for the future of the species, and there is plenty of anecdotal evidence of persecution including the use of poisons by herders trying to protect livestock.

One solution might be a Community Based Livestock Insurance Scheme (CMLIS) similar to that developed by WWF Nepal for snow leopards. The CMLIS model is self-sustaining and locally managed and has been effective in preventing retaliatory killings. Close cooperation with affected herder communities is our project's great strength. We are planning CMLIS on dholes in priority areas in KCA, and we're also planning to collect seasonal scats of dholes to find out more about their feeding ecology. We will be training community people both to manage the CMLIS and to help with monitoring.

AMBIKA KATIWADA



PTES IS HELPING  
COMMUNITIES IN JAVA GET  
TO KNOW THEIR VERY SPECIAL  
PRIMATE NEIGHBOURS

## Loris love and pride

### SLOW LORISES

The Javan slow loris, or *kukang*, to use its local name, is a wide-eyed, cuddly-looking, nocturnal primate. Sadly, this very attractiveness has been the species' downfall as babies are targeted for the pet trade.

The Little Fireface Project is improving understanding of slow loris ecology by following nine young lorises in the wild. We've learned that loris breeding is not seasonal, so protection needs to be year-round. Also, we've found that young male lorises dispersing from their natal ranges go *much* further than females, which explains why it is easier to reintroduce rescued males to the wild.



Ultimately, we want to prevent lorises ever being taken for the pet trade, and we have been conducting a major education initiative. We have produced a beautiful new book, *Slow Loris: Forest Protector*, to help introduce some concepts relatively new to Indonesian youngsters – that animals have emotions, that babies learn from their parents, and that all wild animals play vital ecological roles. This book is being distributed to more than 2000 local children.

In conjunction with the book launch, we held a Slow Loris Pride Day in our village. To get everyone involved, we included a 'Kukang Cup' football tournament. This evoked such

passion that our planned three-day competition became a three-week extravaganza! On the last day, more than 3000 people turned out to see the grand final, amid a great wave of loris love and pride. There were loris uniforms and loris trophies for the winners, Sundanese dance and music, a local comedian, and our adorable giant loris mascot Tereh (the name means 'speedy') hyped up the crowd and cuddled the children.

Thank you for your support through PTES, and please visit our websites at [www.nocturama.org](http://www.nocturama.org) or [www.littlefireface.org](http://www.littlefireface.org) to find out more.

ANNA NEKARIS



You can watch videos of the Loris Pride events on Little Fireface Project's own YouTube Channel.

## Following the bear... all the way to northern Iran

AS BROWN BEAR NUMBERS DECLINE, PTES IS HELPING TO PROMOTE CONSERVATION LOCALLY AND REGIONALLY

### SYRIAN BROWN BEARS

Brown bear numbers in Asia have plummeted by 50% over the past century, and southern Asian populations have become particularly small and isolated, making them the most endangered of all. The Syrian subspecies of brown bear once flourished in the Middle East, but numbers have nose-dived over the past century. Determining the status and ecological needs of remaining populations is now a priority, so that conservation can be planned.

The Arasbaran Biosphere Reserve and Agh Dagh Protected Area in Iran are priority sites for large carnivore conservation. Both are populated by

Syrian brown bears and by nomadic human communities whose demand for natural resources has depleted forest habitats. PTES is supporting a team led by Ehsan Moqanaki of Lund University in Sweden, who is using field surveys and analysis of faecal samples to investigate the population structure, distribution and genetics of local bears, and examine the threats they face. The team is also engaging local communities, helping to mitigate human-bear conflict and encouraging local people to get involved in conservation. Data from the first year is currently being analysed.



Ehsan Moqanaki and colleagues hope that insights gained into the lives of Arasbaran's brown bears through field study and faecal analysis will ease the potentially deadly conflict between bears and local people.

## EUROPEAN EELS &amp; CHINESE MITTEN CRABS

# Feeling eels & catching crabs

PTES INTERN PARIS-VASILEIOS STEFANOUDIS SPENT A CHILLY BUT REWARDING FEW MONTHS DEALING WITH SLIMY AND SNAPPY RESIDENTS OF THE THAMES ESTUARY IN AN ATTEMPT TO IMPROVE FISHING CATCH SELECTIVITY.

Fyke nets are long, bag-shaped fishing nets held open by hoops. They are used for catching eels, whose declining numbers are cause for conservation concern. It is increasingly important that fisheries are able to target eels selectively by size and that nets set for other species do not catch eels by mistake. The aim of my project was to recommend two new fyke nets. One, designed specifically for eels, will release undersize individuals back into the river. The other is designed to trap alien Chinese mitten crabs but release all eels caught as by-catch. Mitten crabs are a significant threat, damaging habitats and infrastructure and competing with native wildlife.

I'm delighted to say that our trials in the Thames Estuary have been successful. We had large catches of mitten crabs and with some further modifications we will be able to minimise the number of eels caught. We have reported our results to the Marine Management Organisation and the Environment Agency and are hoping to publish them in the near future. As a side-project we also looked at the composition of



Paris-Vasileios Stefanoudis



rubbish caught in our nets, data that will ultimately lead to other conservation outcomes. Despite the often adverse weather conditions on the boat, the whole project was immense fun (have you ever tried holding an eel still?) and an experience I will never forget, thanks to the scars of crab bites on my hands!

**WANTED**

The Chinese mitten crab is one of the world's most invasive species. If you see one in a UK river, please report it at [www.mittencrabs.org.uk](http://www.mittencrabs.org.uk) or text 07806 938789, if possible sending a picture.



That's not all folks! We can't report in detail on every PTES project, but your donations are also helping...

**...KONDANA SOFT-FURRED RATS**

Researcher Sameer Bajaru is tackling the knowledge gap concerning this small and critically endangered rodent, known from just three localities in the biodiversity hotspot of India's Western Ghat uplands.



Amol Klamode

**...PHILIPPINE CROCODILES**

Dominic Rodriguez tells us that work helping local farmers to reforest the area around the Philippine crocodile sanctuary at Dinang Creek is progressing, despite a poor season for bamboo growth.



istockphoto.com

**...EUROPEAN BEAVERS**

The Scottish Beaver Trial reports that the population continues to grow slowly, with low mortality and all beavers in good health. Young animals are dispersing and no negative impacts have been recorded on local otters.

**...SEA TURTLES**

Amneet Sanghera/MCS

We're continuing to fund work by the Marine Conservation Society tracking green turtles from the Turks and Caicos Islands. Pictured is Karman the green turtle, wearing a tag paid for by PTES supporters.

## Rare buzzy beast of Dartmoor

PTES INTERN TARRYN CASTLE ROSE TO THE CHALLENGE OF FINDING ONE OF BRITAIN'S MOST THREATENED INSECTS.

### BOG HOVERFLIES

You wouldn't expect searching for an endangered species to be easy, but imagine trying to track down a small fly zooming about its business amongst dozens of lookalikes on the vast expanse of Dartmoor. At times I really did feel I was seeking a needle in a haystack.

With the support of PTES, Buglife The Invertebrate Conservation Trust and Dartmoor National Park Authority, I set out to search for bog hoverflies during the summer of 2012.

The bog hoverfly, which resembles a solitary bee, especially in flight, is listed as a priority for conservation on the UK Biodiversity Action Plan. Once well established and widespread in southeastern England from Hampshire to Cornwall, populations of this attractive insect have dwindled to a few scarce recordings from a handful of scattered sites on Dartmoor. This is



most likely due to changes in land use over the last few decades, reducing the availability of suitable habitat.

I spent the summer searching for bog hoverflies, hoping to shed light on population numbers and distribution as well as gaining some insights into the species' ecology. Unfortunately, as you may remember, 2012 was an exceptionally wet summer. The high rainfall had a negative effect on many flying insects. Like most other flying insects the bog hoverfly doesn't fly in the rain. This means there is less time in their short lives to find a suitable mate, then mate and find sites to lay eggs as well as locate food. All of these activities are important for sustaining a healthy population of hoverflies.

I was lucky to find a few individuals at three sites on Dartmoor. And, despite the poor conditions, we have learned more about the species' ecology. I'm hopeful that in future sunnier years, we'll find greater numbers of bog hoverflies that will help us understand more about what we can do to conserve this endangered species.



## A welcome find in the Forest

### NOBLE CHAFERS

When we ask people to tell us about stag beetle sightings we receive hundreds, even thousands, of records. Not so with noble chafer beetles. Most commonly found in old orchards in the Three Counties, there are also records from the New Forest. We know little about this population (which appears to be isolated from its orchard counterparts) except that it frequents hogweed and elder plants on verges of the main route through the Forest.

Two years ago, with funding from the New Forest National Park Authority, PTES commissioned a survey of the area, using GIS to document and map trees with veteran features such as rot holes, cracks and splits in the bark. We also printed and distributed a leaflet at visitor centres and campsites, asking the public to look out for this striking beetle and report it to us. Even so, when an email arrived from someone saying they had found a noble chafer in their living room, I couldn't quite believe it. This is the first positive record we have received from a member of the public, and a very exciting result.

Retired science teacher Mieke Tanton from Ashurst said 'I almost trod on it. It is very exciting to have this endangered chafer in the Forest.'

LAURA BOWER



Trevor Tanton

# Rocky gets a second chance

HUNDREDS OF ORANGUTANS LIVE TRAPPED IN POCKETS OF HABITAT OR ARE KEPT ILLEGALLY IN CAPTIVITY. THEY DESERVE A CHANCE OF A LIFE IN THE WILD.



## ORANGUTANS

Logging, conversion of forest to agricultural land and palm oil plantations, illegal capture for the pet trade, lethal persecution in retaliation for crop raiding, and fragmentation of habitat are all conspiring to make Sumatran orangutans one of the most endangered primates in the world.

We are helping Panut Hadiswoyo, at the Orangutan Information Centre in Aceh, to take practical, urgent action to conserve orangutans. His team have identified 58 orangutans isolated in such small forest fragments or plantation areas that they need some form of intervention if they are to survive in the wild. Reports of 27 others in peril in surrounding areas are also being investigated.



Over six months, seven orangutans have been rescued, five of them from isolated community farmland and two from private residences.

Those animals that still exhibit typical natural behaviour, despite their experiences, are immediately translocated and released back into protected forest blocks.

Others, such as young Rocky (pictured) require more help. Rocky was confiscated from a family keeping him illegally in their garden. He had become very tame and far too habituated to humans to be safely reintroduced to the wild so he was taken to the Sumatran Orangutan Conservation Programme. Here he was carefully checked for diseases that he might have picked up from contact with humans and now he is embarking on a long process of rehabilitation, probably over some years.

Several other animals face similar challenges but their outlook is hopeful.

All the animals reintroduced are carefully monitored after their release. As well as doing transects on foot, the team use a special aerial drone fitted out with photographic equipment to record sites where conflict with humans might loom, and spot prime habitat for future releases.

To improve the chances for orangutans in the longer term, conflict resolution workshops are held with the park authorities and local people, teaching them passive deterrent techniques, such as the use of handheld firecrackers and bamboo canons, that gently deter orangutans as an alternative to killing them. The team are also working closely with the government in Sumatra to press for further protective measures to save these precious creatures.

JILL NELSON

Orangutan Information Centre

## WESTERN HOOLOCK GIBBONS

# Protecting India's great gibbon hangout

THE WESTERN HOOLOCK GIBBON IS DECLINING FAST, BUT NEW RESEARCH AIDS TO SECURE ITS FUTURE IN ASSAM.

PTES funding is helping another threatened primate, this time in India. The western hoolock gibbon occupies vast forests on the south bank of the Bramaputra, but these forests are shrinking and increasingly fragmented as a result of human encroachment and traditional shifting cultivation practice, known as *jhoom*. As a result, the gibbons (and other species besides) are at risk of piecemeal extinction.

To evaluate the status of western hoolocks in what ought to be a stronghold area, the project team, led by Jihosou Biswas, received specialist training in long-term population monitoring techniques from gibbon expert Prof. Warren Brockleman. The data has been stacking up ever since, and Jihosuo and his colleagues have been able to collate important baseline

information on hoolock populations and distribution within the Langlakso-Mikir Hills-Kalyoni forest complex in the Karbi Anglong district. The various forest blocks making up the complex are assigned a confusing variety of official designations, offering varying levels of legal protection, much of which exists in name only with little or no practical enforcement on the ground.

Jihosuo and his colleagues will use the new information to put pressure on state and local authorities to improve protection for hoolocks and their habitat. Meanwhile, a far-reaching education and public awareness campaign about gibbons and their place in the local ecosystem has begun, focusing on schools and community groups throughout the region.



Dhrithiman Mukherjee

# Do it YOURself...

# COUNT WILDLIFE

with ecologist and stag beetle expert Colin Hawes

Colin Hawes is writing a PhD on stag beetle ecology. He counts wildlife for PTES and other conservation organisations.



COUNTING WILDLIFE gives us vital information about population sizes of species. These data can then be used to compare numbers at regular intervals, say every year, to determine whether populations are stable, declining, or increasing. Are there about the same number of sparrows this year as last or 10 years ago? Has there been a dramatic decrease in numbers, or have they risen significantly? If a species is decreasing in numbers, counting will alert us. We can look for reasons for the decline and use the information to take appropriate conservation action. I take part in *Garden Bird Watch* for the British Trust for Ornithology, count butterflies for *Butterfly Conservation*, and stag beetles for *PTES*. Anyone can help with surveys like these.



Colin Hawes: iStockphoto.com/Alcuin

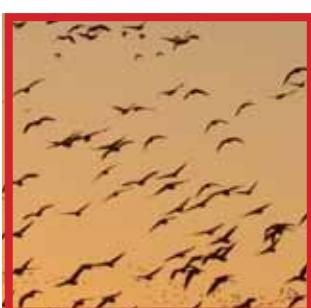
## DON'T LOSE COUNT!

A hand held clicker can be a real help when the numbers get large – it's surprisingly easy to lose track. Alternatively, a low tech solution is to collect a handful of pebbles or gravel and transfer a pebble from one hand or pocket to another every time you reach 100.



## Block and multiply

In a very large flock or herd, it can be impossible to count every individual, especially if they are moving. But with a little practice it's fairly easy to count the number in a small area – sort of an imaginary quadrat. This gives a rough estimate of density, which can be multiplied up to give an estimate of the overall number. For example, the imagined square below contains about 50 birds, and represents about 10% of the pink-footed geese in the picture. Thus a ball-park estimate for the flock is 500. If you fancy counting to see how close this is, feel free!



Laurie Campbell



## Direct and indirect counts

A direct count is exactly that – a count of individual animals. Direct counts are only meaningful when a high proportion of individuals in a population are present and visible at the same time. The procedure is used mainly for birds and large animals such as deer. Accuracy increases with the number of observers, and each person counts the area in front of them.

Indirect counts are achieved by sampling. For example, to estimate the number of grasshoppers in a meadow, a count might be made in a small, measured area. Knowing the total area of the meadow allows the total number of grasshoppers to then be calculated.



wildstory.co.uk

Estimating the size of a large group is not a case of counting every individual. With a little practice you will get a feel for what 10 or 20 birds, mammals, fish or insects look like, even if they are on the move.

## Walk the line - transects

A line transect is used to note the presence and distribution of plants. A measuring tape is stretched out across the ground and the observer then records individual plants that touch the tape at predetermined intervals. This gives an assessment of the number of species present. Try it yourself in different habitats such as saltmarsh, sand dunes, or through a zone grading from woodland to meadow.

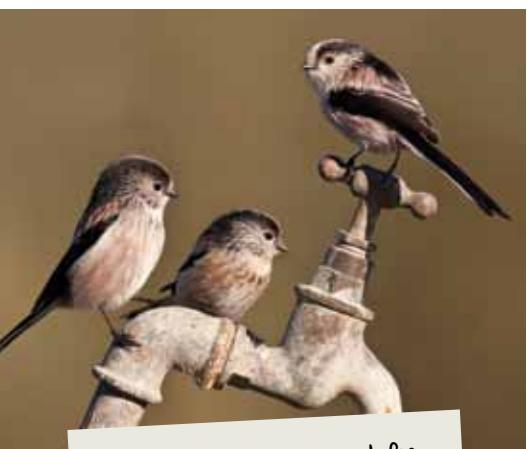
A belt transect may be used to give the proportion of an area covered by plant species, or to count more mobile species such as butterflies or squirrels within a limited zone. Natural or artificial boundaries can be used to delineate the edges of the belt, for example hedgerows bordering a bridleway, or two measuring tapes in parallel, set a metre apart. For ease of recording it is usual to divide a belt into one metre squares.



wildstory.co.uk

An increasing number of wildlife surveys carried out in Britain rely on citizen scientists to gather large volumes of data that can make for powerful statistics. Even if there isn't an official survey for all species, your observations are useful. You can submit them to your Local Biological Records Centre or Wildlife Trust.

## Avoiding duplicates



Microchips like those used for identifying pets can also be used for wildlife. This kind of marking is most often used in reintroduction schemes so that founder members of the population can be recognised and their fortunes followed after release.



Let's face it, animals of the same species often look very similar and, if they are coming and going, it can be difficult to know if you are seeing one animal several times or several different individuals in succession. The surest way to avoid duplicate counts is to only record multiples seen at the same time. This is the approach of the RSPB *Big Garden Birdwatch*, for example. Inevitably it will result in an overall undercount, but this can be taken into account in later analyses. Alternatives are to get to know the animals so well that you can tell them apart – photo-identification works well for some species such as wildcats and cetaceans – or you can carefully mark your subjects to show they have been counted. Birds might be ringed and small mammals caught in live traps might be chipped or fur clipped for later identification, but these are skilled procedures. Marking methods work particularly well with invertebrates such as beetles and snails, which can be dotted with solvent-free paint or marker pen, and projects of this kind might be tried at home.



### RSPB Big Garden Birdwatch

The heavyweight of citizen science surveys is open to novices and experts alike. The next one is on 25-26 January 2014, see [www.rspb.org.uk/birdwatch](http://www.rspb.org.uk/birdwatch).

### Living with Mammals

One of several PTES surveys to rely on citizen scientists, LwM counts the wildlife you see close to home. For information on taking part, see [www.ptes.org/lwm](http://www.ptes.org/lwm)

### Hedgehogs

Hedgehog counts are helping us work out why they are declining so fast. Visit [www.hedgehogstreet.org](http://www.hedgehogstreet.org) to report a sighting.

### Small things

There are several national invertebrate counts. Try [www.bigbutterflycount.org](http://www.bigbutterflycount.org), [www.mothscount.org](http://www.mothscount.org), [www.ladybird-survey.org](http://www.ladybird-survey.org) or our own *Great Stag Hunt*, see [www.ptes.org/stagbeetles](http://www.ptes.org/stagbeetles)

### Look for patterns

Try making the same counts regularly – perhaps on a routine walk once a week or on the same day each year. Over time you might see patterns emerge.

## Capture-mark-recapture

Capture-Mark-Recapture (CMR) is a simple method for estimating the total size of a local population, and it's a good one to try for yourself, for example with snail or beetle species in your garden or local green space. First, you need to capture a sample of, say, **50** individuals from the location. Flying insects can be caught with a net. Ground dwellers can be captured in pitfall traps, or by hand. Mark each individual in such a way that you'll recognise it easily if you see it again.

Marks must be durable and not affect behaviour or welfare, for example by restricting movement



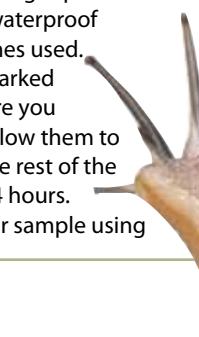
or attracting predators. You might add a dot of quick-drying, water-based paint, or permanent felt marker to hard parts such as shell or wing cases. Variations include using several marks or colours to identify individuals, or using fluorescent paint to allow you to detect nocturnal animals in the dark. Small, lightweight plastic tags attached using waterproof glue are also sometimes used.

Next, release the marked individuals back where you captured them and allow them to mix randomly with the rest of the population for, say, 24 hours. Then capture a further sample using

the same sampling method as before. For the purpose of an example, this might be **30** individuals. Hopefully some of these will be marked. Count these marked recaptures – let's say there are **10**. You can then use the following simple calculation to estimate the population size: multiply the total number of marked individuals released by the number of individuals recaptured. Now divide the result by the number of marked individuals recaptured.

Our calculation would be thus:

$$\text{Estimated population} = \frac{50 \times 30}{10} = 150$$



## Parting shot



The demise of our woodlands and hedgerows has deprived dormice of their living space and concentrated it into isolated fragments of land, making it hard for them to disperse and find mates. PTES is helping woodland owners and managers to manage their land such that dormice can thrive again.

Dormice still face a very uncertain future. Your support is vital.

Thank you.

