ISSN 2051-6703
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Number 3

# WILDLIFE world

people's trust for endangered species |

UK

Bat data boom
Pine martens in Wales
The power of citizen science

OVERSEAS

Demystifying dholes
Philippine crocodiles
Great ape reserve in Cameroon

# Hedgehogs need YOU

## DE-EXTINCTION?

What does the possibility of resurrecting extinct species mean for conservation?

## NEWS UPDATE

The latest on threatened wildlife, at home and overseas

## WILD KIDS

Inspiring the conservationists of tomorrow

I chose this picture of a young blackbird to represent all that is wonderful about spring. But writing this editorial as late snow still swirls outside, I'm struggling to come up with words conveying the usual vernal themes of warmth and renewal. I've decamped, with laptop, to my nice warm kitchen these past months – cosier than the office and with a better view of the bird feeders. Heating and bird food – I dread to think what either have cost this year. Like the past winter, the economic doldrums look set to last longer than expected. We've been wearing extra jumpers to save on fuel and, I admit, I have thought twice about shelling out for bird food. Like your contributions to PTES, feeding them is an investment in something other than family essentials.

But – these generous extras make *such* a difference. As well as directly helping species in trouble, investing in these ways gives us a say in the kind of world we want to live in. Don't be shy about your contribution. If you tell the world what you are doing and why, others will follow and small contributions can add up to very great change, as PTES projects demonstrate only too well.

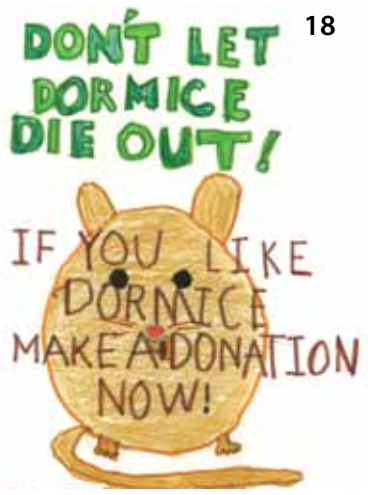
This edition of *Wildlife World* has a special focus on the nation's favourite mammal – the hedgehog. Thanks to all our Facebook friends who voted for the wonderful cover picture by Laurie Campbell – it was my favourite too! As several of you quite rightly pointed out, hedgehogs are not normally seen out in broad daylight – in fact for them to be active by day can be an indication that all is not well. If you find a hedgehog during the day, be alert for other signs of distress such as small size, injury, listlessness or external parasites, and contact a local hedgehog carer for advice.

Hedgehogs need all the help we can give them, and you can find out in our main feature (p12-14) what PTES is doing and how you can get involved yourself.

Amy

Roger Tidman: Nature Photographers Ltd






# In this edition ...



## 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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Supporting PTES is rewarding in many ways. These pictures were all taken on our surveys, Wildlife Encounters or other activities. Have you ever...

...wondered what six million starlings look like?

Iain Green

Iain Green

...fancied meeting a prehistoric predator (this handsome beast is a four-spotted chaser dragonfly)

Iain Green

...or wished you could see the real 'Ratty'?


Natural History Museum

In October this adorable youngster helped us promote Hedgehog Street at the Natural History Museum's Hedgerow Harvest event.

PTES

What a winter! We were tracking Briddlesford's red squirrels in the snow at the end of March.

PTES

...but the signs of spring were there if you looked!

...and the dormouse boxes got a good spring clean.

For details of Wildlife Encounters, surveys and other PTES activities, visit www.ptes.org or scan the code and discover how you can join in.

## PTES likes ...

***The Eurasian red squirrel***
by Peter Lurz, Westarp Wissenschaften
£17.74

*Recently translated from German, this authoritative new title provides an up to date picture of the rapidly changing status of Britain and Europe's only native tree squirrel. An accessible, highly informative, attractively illustrated book.*

***SPECIAL OFFER:***
***Hunters of Longtree: A Cotswold Tale***
by David Walker, Orpheus Press
£10 incl. P&P

*An evocative social and natural history of rural Gloucestershire, told through the activities of its charismatic predators. Order from david.walker999@btinternet.com or 4 Walmer Meadow, Aldridge, WS9 8QQ. Quote PTES and we will receive £2 from each sale.*

# Frontline

FOR DECADES THE PROSPECT OF BRINGING EXTINCT SPECIES BACK TO LIFE WAS THE STUFF OF SCIENCE FICTION. BUT NOT ANY MORE. **AMY-JANE BEER** CONSIDERS SOME OF THE IMPLICATIONS OF RADICAL NEW TOOLS IN CONSERVATION BIOLOGY.




***Resurrection research has already recreated a Pyrenean ibex and embryos of the gastric-brooding frog. So what other extinct species might be candidates for de-extinction? The ambitious list includes the thylacine, woolly mammoth and American passenger pigeon (below).***

REASONS FOR SUPPORTING PTES vary, but it's fair to assume that everyone reading this magazine believes that, uniquely among the life-forms on Earth, humankind has some responsibility to other species, and that knowingly causing or allowing the extinction of another species is ethically wrong, morally negligent, economically short-sighted, scientifically inadvisable or just a bad idea. Most of us will have been affected at some point by the realisation that extinction is forever. Except that now, maybe it isn't.

The bucardo, or Pyrenean ibex, a subspecies of Iberian wild goat, was declared extinct in January 2000. DNA from the last known individual, a female called Celia, was subsequently used to create a series of cloned embryos, just one of which was successfully implanted into a surrogate goat mother and carried to full term. A baby bucardo was born on 30th July 2003 – the first time an extinct animal had been resurrected. But success was short-lived, and the newborn died within ten minutes due to severe lung deformity, a common problem in cloned animals. That particular story may not have had a happy ending, but it marked the beginning of something very big.

> 'The loss of a species does damage, but putting extinct species back could be no less messy'

In March this year, scientists in Australia announced that they have successfully recreated embryos of the gastric-brooding frog, *Rheobatrachus silus*, discovered in 1972 but declared extinct in the mid 1980s. It had an extraordinary reproductive strategy in which females swallowed fertilised eggs, and incubated them in their stomach, with acid production turned off. The froglets were born by being burped out of their mother's mouth. So far the research team has been unable to get the embryos to progress, but they are confident that doing so is just a matter of tweaking the procedure.

In the US, a project led by radical thinker Stuart Brand plans to recreate the American passenger pigeon, once the most abundant bird on the continent, but hunted to extinction in 1914. The team will use a patchwork of DNA from museum specimens and living band-tailed pigeons to create embryos, then selectively breed until they have something that looks and acts like a passenger pigeon.

These historic events mean that the time has come when humanity can say, yes, we can bring some extinct species back. De-extinction is here. The terminology is clumsy, but get used to it – you'll be hearing it a lot more.

It's important to realise we're not talking *Jurassic Park* – the species in question are much more recent than the tyrannosaurs and velociraptors of Michael Crichton's dino-disaster epic. Dinosaur DNA is still much too difficult to find for that to be even a remote possibility. But can we have back the gastric-brooding frog and the Pyrenean ibex? Probably. The American passenger pigeon? The woolly mammoth? The thylacine? The dodo? Quite possibly.

The main rationale for pursuing de-extinction is that man-made extinction leaves a hole, and if we can fix the hole, we should. There is no doubt that the loss of a species does damage – but in many cases, putting an extinct species back could be no less messy.

The road ahead for de-extinctionists is littered with technical stumbling blocks, ethical dilemmas and possible unintended consequences. What will the animals and plants that make the return journey from extinction be? Will the results of Stuart Brand's project actually be passenger pigeons, or just freakish facsimiles? Could they, or any de-extincted species reclaim niches since occupied by others, including people? What would be considered acceptable impacts for a de-extincted species on the rest of us? How would we know what was normal behaviour for a woolly mammoth or a dodo? The questions are manifold. But the possibilities are exhilarating and, for science, the challenge alone may be enough to drive these projects on.

One thing we know – it will always be better to avoid man-made extinction in the first place. PTES works hard for this cause, and our supporters give generously of their time, money and energy. Many of our fundees invest whole careers in the conservation of species and others pay more dearly still. The recent CITES conference heard a report from the International Ranger Federation claiming that 1 000 rangers have been killed in the last decade, mostly protecting elephants and rhinos. The conservation of living species, especially those facing imminent extinction, will always be something to be passionate about. We have the power to prevent species crossing into extinction, and we should exercise it, even if there does turn out to be a way back from Neverland.

**Dr Amy-Jane Beer is a biologist and natural history writer, PTES supporter and Editor of *Wildlife World*.**

NORFOLK BATS

Bill Smith, Eastern Daily Press, Archant

Hugh Clarke BCT

# Bat spotting goes large

BAT STUDY IS CHANGING fast, thanks to new technology for automatically capturing and analysing bat calls, which generates huge volumes of data on distribution, status and trends. Unfortunately, the cost of modern bat detectors means they are still largely the preserve of environmental consultants or universities rather than local bat groups or individuals. PTES is helping to change this by funding a project by the British Trust for Ornithology and the Norfolk *Myotis* and barbastelle study groups. The project will supply real-time bat detectors to be moved from site to site, giving bat enthusiasts an opportunity to use technology not normally available to them. By recruiting a large volunteer base, the project has the potential to achieve monitoring on a county-wide scale.

The team are especially interested in Brandt's (inset), whiskered and Alcathoe bats, which may be more widespread than current evidence suggests. At present fewer than one record of these cryptic species is submitted to the Norfolk Biodiversity Information Service each year, but acoustic identification has improved considerably as a result of work on these species by Chris Scott at Leeds University and Charlotte Walters at ZSL. An understanding of how far acoustic identification can be pushed with new tools will be invaluable for future large-scale monitoring.

PINE MARTENS

VWT

# Body of evidence

LATE LAST YEAR, a young male pine marten met an untimely end on a Welsh road. Tragic for the animal, but a cause of delight for zoologists as unequivocal proof that pine martens live in Wales. The last confirmed incidence of pine marten roadkill here was in 1971. 'The significance of this find cannot be overstated,' said Natalie Buttriss, Chief Executive with The Vincent Wildlife Trust (VWT). 'It supports the long-held view of mammal experts that this attractive tree-dwelling animal does exist in Wales, but in such low numbers that very few people ever see one.'

The carcass was found by local resident Olly Amy close to the village of Aberhafesp near Newtown. Olly contacted VWT, and DNA analysis provided the proof that the individual was native to the British Isles.

In the last 20 years, VWT received more than 300 credible reports of pine martens in Wales and has built up a map of 'hot spot' areas. Until now, however, the best evidence was a scat found in Cwm Rheidol forest in 2007, which later tested positive for pine marten DNA. In recent years, VWT has organised hunts for pine marten scats using teams of volunteers, deployed remote cameras and baited hair tubes, but despite this endeavour no further unequivocal proof has been found – until now.

This find coincided with the employment in November of a VWT Pine Marten Officer, David Bavin, whose two-year project aims to determine the status of the pine marten in Wales and help develop long-term conservation plans to ensure a safe future for this rare mammal.

M Shersby

# Focus on mammals in Ireland and Wales

iStockphoto.com/GlobalP

MAMMALS IN A Sustainable Environment (MISE) is a new project for Wales and Ireland, funded by the European Regional Development Fund and enacted by our friends at The Vincent Wildlife Trust (VWT), and Waterford Institute of Technology (WIT), among others. MISE aims to encourage community involvement in mammal conservation. Small- and medium-sized mammals are key components of most ecosystems but can be difficult to monitor due to small numbers and elusive or nocturnal behaviour.

At WIT in Ireland, the MISE team are developing non-invasive DNA-based techniques to monitor small- and medium-sized mammals. With the help of volunteers, they are undertaking monitoring and conservation activities including scat collections, and hair-tube and feeding station surveys for species including red squirrel, otter, pine marten, and bats (see www.miseproject.ie). In Wales, monitoring will also include species absent in Ireland such as polecats, weasels, harvest mice and dormice. The information gathered will help identify potential threats to individual species so that appropriate action can be taken to safeguard their future. Dr Jenny MacPherson, MISE project officer for VWT, says 'All volunteers are welcome and no previous experience is needed. Dates for MISE fieldwork in Wales can be seen on the VWT website at www.vwt.org.uk/our-work/projects/mise-project.'

## Derek Yalden

Everyone at PTES was very sad to hear of the sudden death of Derek Yalden in March. Derek was an outstanding zoologist, a former lecturer at Manchester University and President of the Mammal Society since 1997. He was a uniquely knowledgeable and wise person and always absolutely charming. He was a good friend to PTES and is a great loss. Our sincere condolences to his family and many friends.

Pat Yalden

# A picture 10 years in the making

IN ITS TEN YEARS, our *Living with Mammals* survey has built up a wealth of data. We've found that gardens and areas with compost heaps, wood piles, ponds or bird tables have a greater abundance of mammals than those without, and that one species, the hedgehog, is disappearing fast from these spaces (see p12). In total, the survey has recorded 23 species or groups of species (such as bats) around our homes and places of work, and while the focus of its findings has been on the decline in hedgehog numbers, information on the fortunes of other species has also emerged.

PTES

For most, the decade has seen little change, but some species have shown a distinct pattern. Bats (most likely to be pipistrelles and brown long-eared bats in urban areas) show a 'hill-shaped' trend, with records peaking around the midpoint of the ten years of the survey. Rabbits, which were recorded at about a quarter of sites, show an upward trend in gardens but a decreasing one at other types of site.

For badgers and foxes, the changes are less straightforward. For both, the number of positive weeks (those that recorded a sighting) increased by an average of 1.4% and 4.9% annually, for foxes and badgers respectively, but the number of sites where they were recorded did not change. The trend for badgers does increase but within the margin of statistical error. It seems that, at sites where they are already present, foxes and badgers might be becoming more numerous, but neither is becoming more widespread. An alternative explanation, however, is that the same number are being spotted more frequently – either because they are more active at times when they might be seen, or because surveyors at those sites are becoming better at spotting them.

What is clear is that the power of the data is growing year by year. The longer *Living with Mammals* continues to collect records, the more likely it is that trends will be picked up, and that, as shown by the hedgehog, may be crucial to the future security of our native fauna.

DAVID WEMBRIDGE

# Just browsing: culling elephants won't save trees

AFRICAN ELEPHANTS

ELEPHANTS ARE avid browsers and well known for their destructive habit of felling trees. This presents a dilemma for reserve managers in South Africa and in 2008 led to the reinstatement of culling as a legal option for controlling elephant numbers in order to protect vegetation. But research funded by PTES and carried out by Dr Christopher O'Kane of WildCRU suggests that trees will still be in trouble, as other large herbivores including impala, giraffe, greater kudu, black rhino and nyala tuck in.

All six species share a similar core diet of just eight woody tree and shrub species, and while elephant feeding tactics are the most conspicuous, over time, the nibbling of small trees and seedlings by other herbivores is just as limiting to woodland regeneration. In a six-year study, including a review of a half century of literature, repeated vegetation surveys and GPS tracking of elephants and impala in Hluhuwe-iMfolozi Park, South Africa, Christopher discovered that the survival chance of a woody seedling in an area of high impala density is half that in an areas of low density. The implication is that controlling impala numbers may be at least as effective in landscape regeneration as culling elephants. Alternative management options are to be welcomed, and this work suggests that future management should consider the biomass density of several groups, rather than focusing on the system's perceived 'keystone' species. Such principles may also apply to temperate and other systems.

Tarik Bodasing; Christopher O'Kane; Geoff Clinning

## TWIN YOUR PET

Does your moggie rule in the urban jungle? Is your pampered pooch wild at heart?

THERE ARE OVER 16 MILLION pet cats and dogs in the UK, but the wild cousins of our companions are faring less well, with many species of big cat and wild dog under threat.

We've come up with an innovative way of fundraising for endangered carnivores: for £3 a month you can twin a pet with a big cat (a lion, cheetah or leopard) or a wild canid (an Ethiopian wolf or African wild dog).

Our pet twinning programme will make a serious difference to threatened big cats and wild dogs, with funds going to help your animal of choice.

Your pet will receive an engraved ID tag, a personalised e-certificate, regular e-newsletters and new supporters will also start receiving *Wildlife World*.

To twin your pet, and match their personality to one of the carnivores needing help, visit www.savingcatsanddogs.org


saving BIG WILD cats AND dogs

iStockphoto.com/GlobalP

CITES CONVENTION

# CITES at 40 acts for sharks

iStockphoto.com/Shane Gross

IN MARCH 1973, nations began signing up to the Convention on the International Trade in Endangered Species of Wild Fauna and Flora. The UK was the 29th signatory, in 1976, and the most recent was Lebanon, on Christmas Day 2012. In March this year, marking CITES' 40th anniversary, delegates representing 177 party nations and hundreds of conservation NGOs gathered in Bangkok. They had much to achieve in two weeks of negotiation.

Recommendations were formulated to strengthen protection for rhino populations as poaching escalates (see below), but there was frustration from many nations and lobbyists over a lack of commitment to stem the trade in elephant ivory, in particular from the nations where most ivory ends up, China and CITES host nation Thailand. As a delegate from Tanzania put it 'Perhaps this convention will continue monitoring the killing until there is nothing left to monitor.'

On a more positive note, delegates voted to upgrade regulation on fishing for several species of shark and ray which have suffered drastic declines in recent years thanks to the Asian market for fins used in soup. Now listed on Appendix 2 are the oceanic whitetip (pictured), porbeagle and three species of hammerhead shark, plus two species of manta ray and the freshwater sawfish. The decision was ratified in a tight vote on a dramatic last day of convention proceedings.

40 CITES 1973-2013

iStockphoto.com/J Horrocks

RHINOCEROS UPDATE

## 2012: a record year for rhinoceros poaching

Before the year was even over, rhino conservation groups released official figures revealing that 488 rhinos were killed in South Africa between January and October 2012. This far exceeded the total of 448 poaching deaths recorded in the whole of 2011. Poaching often increases during the South African summer, so it was inevitable that the country's total annual poaching losses would exceed 500 rhinos for the first time in recent years.

Over 214 rhino-related arrests were made in South Africa last year. Notable court cases included that of infamous horn smuggler Chumlong Lemtongthai, who pleaded guilty to abusing the permit system. In another high profile case, a court ordered that rhinos belonging to Dawie Groenewald, implicated in a horn trading ring, are to be to be sent to another game farm for safe keeping. All this makes news of successful breeding by translocated Indian rhino even more welcome (see Scrapbook, p10).

# NELSON's COLUMN

## The right climate for people and hedgehogs

Sometimes the most unexpected things come out of conservation. With so many people involved now in *Hedgehog Street* (www.hedgehogstreet.org), we've had lots of comments back from our Hedgehog Champions. One emerging theme is the pleasure many have taken in meeting their (human) neighbours as well as their hedgehogs. Humans can live in fragmented habitats too and hedgehogs have provided the excuse for some to connect or reconnect with other people. It seems what's good for hedgehogs is good for us as well.

Some of our Hedgehog Champions have been helping us look for possible changes in the timing of hedgehog emergence after hibernation. We have some data from the 1970s for comparison and are looking for evidence that climate change may be starting to play a part. To further support the Champions we are revamping the *Hedgehog Street* site and producing educational materials for younger people. And it seems that our education work has become all the more crucial given what appears to be a ludicrous proposal by government to remove all mention of climate change from the geography curriculum up to age 13. Given that many students decide not to study geography at GSCE, this will lead to an emerging generation picking up climate change information from random quarters. A tragedy indeed when young people are some of the most vociferous advocates of action by governments, businesses and society to tackle the issue.

All best wishes

Jill Nelson

Jill Nelson, Chief Executive PTES

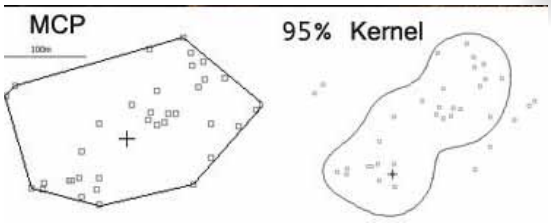
iStockphoto.com/roverto

# SCRaPBook

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

MO ON THE GO...

Hi PTES,
I thought you might like an update on Mo the slow loris. We have been tracking him and these diagrams shows the first set of fixes on his location, outlining his core range.



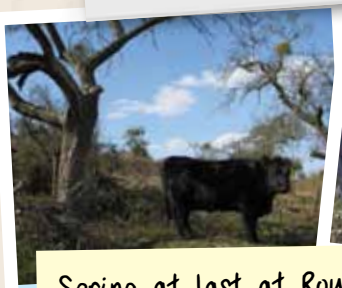

Mo wanders less than reintroduced animals using the same area, demonstrating that he is settled and content in his own place. We estimate his total home range at around 4 ha. He is lucky to live in one of the richest parts of the agroforest. We have also seen a completely gorgeous baby, pictured here belly-flopping on a banana leaf. We think it might be his offspring with Charlie (Charlotte). Mo certainly behaves like a doting dad, though whether he is the biological father we have no clue!

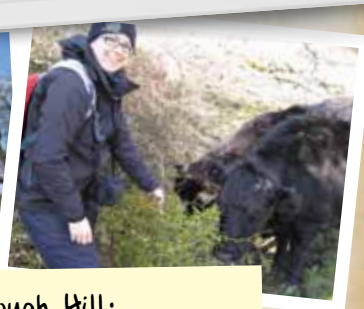
Anna Nekaris, Oxford Brookes University

MINI MO – Is our slow loris a Daddy?

**@naturebygreen**
**First #butterfly of the year (peacock) & very obliging water vole on @PTES wildlife photo day. Kingfisher, kestrel, & sparrowhawk too!**

PTES has a new Administrative Officer. Katherine Stansfield was previously an intern at London Zoo working on their website and volunteered for The Great Primate Handshake in Uganda. Her role with PTES incorporates a variety of tasks including financial administration and managing the online shop.





Spring at last at Rough Hill: Laura and Henry were pleased to find that our orchard reserve is recovering from winter flooding. The resident Dexter cattle seemed equally delighted with the sunshine!

## Happy batty ending

We love PTES supporter Bron Thurston's account of a bat rescue. The story, illustrated by Bron's own drawings, tells of a young pipistrelle's brush with disaster and his subsequent rehabilitation. Copies are available from Bron for £3 to cover printing, postage and a donation to PTES. Email bron.thurston@gmail.com

**Frankie Lees**
**'I just twinned my cat Kiki with a leopard! Twin your cat too and help a really amazing charity!'**

**@CPRE**
**hedgerows: crucial for sheer beauty and uniqueness of landscape & wildlife - great work from PTES on dormouse**

**@ChrisGPackham**
Re *Saving big cats and wild dogs* campaign
**Yes, top work, a lot more needed by others.**

**@RetiredFaith**
**Brilliant! So pleased to see so much publicity for hedgehogs! :)**

## Nova Scotia with PTES

'This summer I was lucky enough to visit Nova Scotia on a PTES trip led by experts from the University of Oxford. I learned a vast array of mammal monitoring techniques, helped with live mammal trapping, radio tracking, camera trapping and observational study including field sign transects and pellet sampling. As well as visiting various wildlife parks and areas of conservation, I was able to see a multitude of native North American species such as moose, skunk, racoon, beaver, porcupine, black bears and even wolves. It was an incredible experience I will never forget, thank you!'

EMILY WILSON

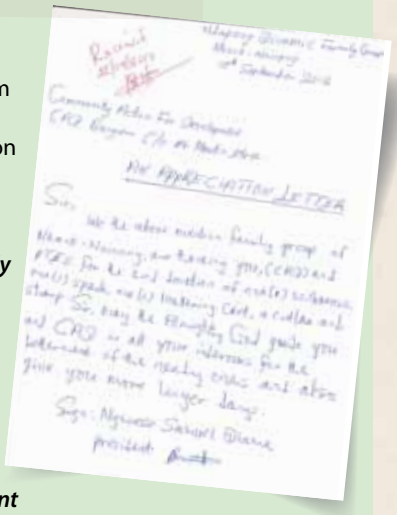
## HONOURS FOR ANIMALS

PTES enjoyed a bit of showbiz recently at the British Animal Honours. In an ITV show broadcast in April, host Paul O'Grady presented awards in categories such as Local Charity of the Year, Wildlife Conservation and Outstanding Contribution, and recognised military, rescue, therapy and assistance animals.

PTES Chief Executive Jill Nelson sat on the judging panel, pictured above, L-R: journalists Donal MacIntyre and Emily Beament, vets Emma Milne and Zara Boland, Sean Wensley of the PDSA, Virginia McKenna of the Born Free Foundation, Jill Nelson, Laura Jenkins of Battersea Dogs and Cats Home, Celia Hammond of the Celia Hammond Foundation and Simon King, representing the Wildlife Trusts.

## Growing change

This letter of appreciation is from a family involved in the Prunus project run by Community Action Development in Cameroon and funded by PTES. It reads:



***'Sir, we the above mention family group of Nkack-Nninong are thanking you, (CAD) and PTES for the kind donation of one (1) wilbarrow, one (1) spade, one (1) watering cart, a cutlas and sharp. Sir, may the Almighty God guide you and CAD in all your indevours for the betterment of the needy ones and also give you more longer days. Ngwese Samuel Diame, President'***

Thanks to Martin Etone of CAD for keeping us up to date on his project to engage community support for the conservation of this important medicinal tree. Martin included some pictures of CAD's school tree planting project, also supported by PTES.

Newly planted prunus trees in blossom, providing shade, beauty and a changing environment in Ndibse, Cameroon

### Manas Indian rhino update

I write with news of a new rhino calf in the Bhuyanpara range. It is very difficult to go near to the ferocious mother, so we are monitoring from a distance. The last baby rhino in the area was poached so this one is protected by forest authority patrols and volunteers. There is also a possibility of more calves to come from translocated rhinos.

We would again like to thank PTES for helping our work.

– Pranjal Bezberua

*The image is fuzzy, but it means such a lot - a new rhino in Manas tiger reserve.*

**PUBLICATIONS**

Didiher Chacon-Chaverri of WIDECAST Costa Rica tells us the genetic study of Atlantic leatherback turtles PTES helped fund has now been published in the journal *Conservation Genetics* Feb 2013 DOI 10.1007/s10592-013-0456-0

Wai-Ming Wong and Matthew Linkie's project monitoring sun bears in the changing landscape of Sumatra's Kerinci Seblat National Park (KSNP) and Batang Hari Protection Forest has been published in *Diversity and Distributions* 2012 pp1–10 DOI: 10.1111/ddi.12020

Mireille Randriankina and her team have published new insights into the distribution of the brown-tailed vontsira in Madagascar – work made possible by PTES. See *Small Carnivore Conservation* **47** pp82–86, Dec 2012

# Meet the team...

PTES is guided by a board of five trustees. In this special *Meet the Team*, we're delighted to introduce the recently appointed Chair of that board, **Sheila Anderson MBE, HonFBAASc**

Sea Mammal Research Unit ; Rona Anderson-Witty

**Sheila, please tell us a bit about your wildlife background and the things that have inspired you.**
'When I started at university in the 1960s, I soon became wrapped up in student politics at the expense of my studies in zoology. That all changed on an ecology course at the Monks Wood Research Station (then part of the Nature Conservancy), where I was inspired by the passion of the researchers and the experience of conducting my own fieldwork. I then attended an excellent series of lectures on marine mammals by Nigel Bonner, who had been a sealing and whaling inspector in the Antarctic, and I was hooked. It was also the time of Rachel Carson's *Silent Spring* and Frazer Darling's Reith lectures on *Wilderness and Plenty*. My first job was with the Nature Conservancy and my second with the Sea Mammal Research Unit. Later I began working in science communication. I love science, and translating it to non-scientists without losing accuracy is vitally important.'

**How did you come to be involved with PTES?**
'When John Beddington, the Chair of PTES trustees for many years, was appointed as the UK's Chief Scientific Advisor, he had to give up connections that might impinge on his independence. He cornered me at a science event in London in 2009 and asked me to become a trustee of PTES. I was pleased to find that an old friend from the Nature Conservancy, Mike Richardson, had already been recruited as Chair. With his added persuasion, I was soon off to my first trustees' meeting at Briddlesford Woods on the Isle of Wight.

At that point I didn't know much about PTES, but I did know Jill Nelson (PTES Chief Executive) from her previous excellent work with the British Science Association (then the BAAS). I knew that the organisation was in safe hands, and Jill's enthusiasm for PTES is catching!'

**What, for you, is special about PTES?**
'It is a small but international conservation charity that can respond quickly when conservation priorities are identified, either in the UK or across the globe. In some ways it is quirky – covering a very varied array of issues, species, habitats and problems. We try not to overlap or repeat what other organisations are doing. The key thing for me is the science-based approach. We fund research that asks the questions: What is the problem? What is causing it? How it can it be fixed?'


Sheila Anderson

Sheila's years of work with the Sea Mammal Research Unit made her a leading authority on British seals and led to work with colleagues on species such as harp seals.

**PTES is proud of its staff and its huge team of volunteers – how do you see their roles?**
'A very special aspect of PTES is the team of people who organise our efforts – managing grant applications and all the admin that goes with grant schemes, running bands of volunteers on projects like dormouse and hedgehog monitoring, looking after our reserves, fundraising, gathering data on species and habitats directly. Commitment, enthusiasm and youthfulness are all there in spades, and it's a joy to be involved with them.

I no longer get out in the field much – but I have huge appreciation for those out there in their wellies. Having done my share of field work, I know it's hard and I sometimes feel almost guilty reading about these wonderful efforts from the comfort of the office.

Volunteer input is absolutely vital. I admit I was initially sceptical about surveys like *Mammals on Roads* and *Living with Mammals*. They didn't feel terribly scientific. But I have been astounded by the power of the data that has been has returned, in particular regarding the decline in hedgehog numbers. I am a complete convert!'

**Finally, what are your hopes for the future of PTES?**
'While I've been with PTES, we've spent a lot of trustee time reviewing how we spend the money that our supporters donate so that we can get the best outcomes for conservation. This is so important, especially during these years of economic crisis. Having a clear strategy for tackling the top priorities, ensuring we don't overlap with other conservation groups and working in partnership with others when we can, are all key elements in keeping our work relevant and effective. My job will be to help the trustees and staff to continue these approaches so that PTES remains a key player in international conservation.'

# HEDGEHOGS IN CRISIS

**WE HAVE BEEN WARNING OF HEDGEHOG DECLINE FOR SOME TIME. WE ARE WORKING WITH THE BRITISH HEDGEHOG PRESERVATION SOCIETY (BHPS) TO HELP. BUT NEW RESEARCH SHOWS JUST HOW BAD THINGS REALLY ARE FOR THIS ICONIC MAMMAL.**

**THE TIME TO ACT IS NOW.**

CONSERVATION requires an understanding of how wild populations are changing, but for nocturnal and unshowy species, surveys over a sizeable area are difficult. Surveys in urban areas, over a mosaic of spaces with multiple uses and owners, are harder still. But such areas may be significant for wildlife conservation and, for hedgehogs, they are more important than ever.

With the help of thousands of volunteers, PTES conducts two annual mammal surveys, *Living with Mammals* and *Mammals on Roads*. The results of a 10-year trend analysis on these data sets now show that hedgehog numbers in Britain have been declining by three to five per cent *each year,* with losses most apparent in the southwest, southeast and east of England.

Between 2001 and 2011, records of hedgehogs in *Mammals on Roads* fell by 32%, while over the similar period 2003 to 2012, hedgehogs documented in urban green spaces in *Living with Mammals* fell by 37%.

These findings reinforce the conclusions of *The State of Britain's Hedgehogs* (PTES & BHPS, 2011), that hedgehog numbers in Britain are declining dramatically. The loss is as rapid as that of the world's tigers and, if the species was a bird, the RSPB would award it Red List status – the highest conservation priority.

While all the evidence points to a rate of loss of several per cent each year, the size of the loss historically is harder to gauge. In most cases, estimating the size of a wild population is a best guess, based on the extent of available habitat and typical densities of animals. One estimate in the 1950s put the British hedgehog population at 36.5 million, but it is difficult to be confident of its accuracy. In 1995, the figure was put at 1.5 million, with a little more confidence. Based on our results, a reasonable estimate today is fewer than one million.

*Hedgehog Street*

## The big picture

The loss of hedgehogs raises wide concerns. Hedgehogs are generalists, they feed on soil invertebrates and they're not fussy in their habitat requirements. So if there is a big decline in hedgehogs, it raises serious wider questions about the quality of the habitats they occupy. PTES and BHPS have initiated urgent new research at the Universities of Oxford, Reading and Nottingham Trent to find out why hedgehogs seem to be in so much trouble. Reasons

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Hedgehog Street

almost certainly involve habitat loss and fragmentation. Habitat quality may also be a factor, with meagre hedgerows and fewer invertebrate prey making life difficult. Restoring hedgerows to improve shelter and nesting opportunities and managing field margins and grasslands for invertebrates may help.

In urban areas, new housing developments with small gardens and impenetrable fencing make green space inaccessible to hedgehogs. Male hedgehogs range over two to three kilometres in a night in suburban areas, so we need to think about these habitats on a neighbourhood-scale.

Then there is the badger question. Hedgehogs are eaten by badgers and badgers compete with hedgehogs for food. The two species have coexisted here for several thousand years and, whilst it is likely that where badger numbers are high the number of hedgehogs will be low, to suggest that badgers are the most important factor affecting hedgehogs today is a mistake. Hedgehogs rarely encounter badgers in urban areas but they are declining just as severely in these places as in the wider countryside. Moreover, the rate of decline is not related to the presence of badgers at particular urban sites. Hedgehogs are declining just as badly in rural areas with low badger densities, such as East Anglia.

Several pressures are interacting. A changing climate may impact on hedgehog numbers by influencing the timing of hibernation. Mild weather can delay hibernation or elicit premature awakening, impacting on fat reserves and breeding times, and consequently affecting the long-term survival of the species.

## Fighting for hedgehogs

There is no doubt that hedgehogs need urgent and practical action. In 2011, we joined forces with BHPS to act. As well as clarifying the depressing news of hedgehog decline, we have achieved much else besides, and are now embarking on the second, two-year phase of our campaign.

Through the *Hedgehog Street* website (www.hedgehogstreet.org), we have targeted people with gardens living near other people to help enhance suburban and urban landscapes for hedgehogs. Hedgehogs have long been frequent visitors to such places but the sudden decline in the population in rural areas, and lack of clarity as to the reasons why, makes hedgehog survival in towns and cities suddenly very important indeed. They have become a vital reservoir population that must be nurtured.

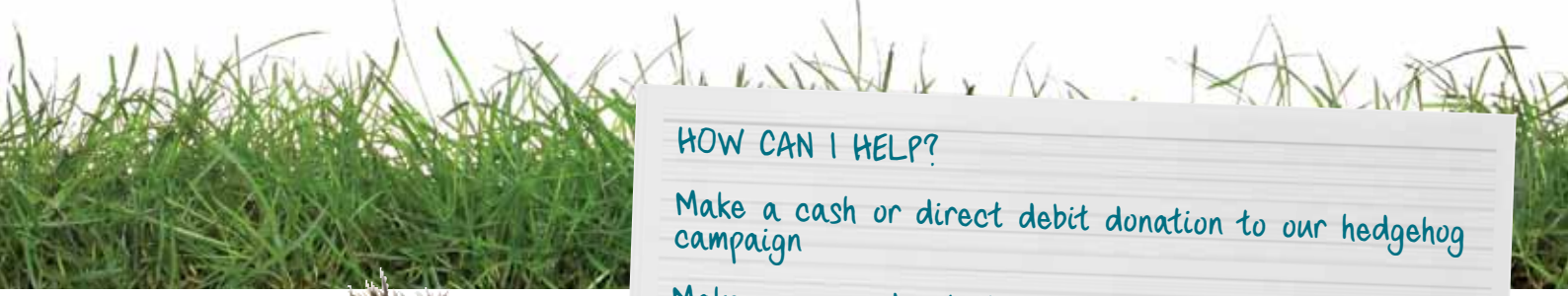
Over 25 000 people have already downloaded or been sent information on *Hedgehog Street*. Many have become active 'Hedgehog Champions', committed to making their neighbourhoods hedgehog friendly. Last year about 10% of them responded to a questionnaire we devised to find out more. Back then at least 4 699 neighbours had been recruited, 2 660 hibernation sites created, 5 064 natural hedgehog feeding areas provided, 3 404 hedgehog hazards removed and 4 823 gardens linked through holes in fences equating to over 293 hectares of land improved for hedgehogs. A fantastic result!

*Hedgehog Street* is now being refreshed, with new ideas, competitions and other features added. We hope to be able to offer 'Neighbourhog Watch' stickers.

iStockphoto.com/Global P

***Supporters of PTES and BHPS and our army of Hedgehog Champions have been taking action for hedgehogs in a huge variety of ways: recording sightings, improving access to gardens for hedgehogs and feeding those that visit, creating awareness in schools and communities and raising much-needed funds to support our work.***

Hedgehog Street



## HOW CAN I HELP?

Make a cash or direct debit donation to our hedgehog campaign

Make your garden hedgehog-friendly

Tell everyone you know about Hedgehog Street

Become a Hedgehog Champion

Buy Following hedgehogs' footsteps (£12) or Gardeners' friend (£10) from our online Gifts of Nature collection

Go on one of our Wildlife Encounter events

iStockphoto.com/Global P

At least 5 000 more gardens will be linked so hedgehogs can roam freely and make another 300 hectares of land more hedgehog-friendly. Regional 'Super Champions' will connect people involved locally and step up for media work where necessary. And Champions will be invited to be part of research projects, such as the *Hedgehog Hibernation Survey*, that help add to our knowledge.

The work of Hedgehog Champions is critical. We are grateful for all their actions so far, which have produced tangible benefits. Supporting their effort in practical ways is an urgent priority.

### Hedgehogs in public spaces

As well as domestic gardens, hedgehogs use parks, recreation grounds, nature reserves and other green spaces looked after by local councils and others. Often the same obsession applies of keeping everywhere as tidy as possible and shutting gates at night. We decided to support these amenity managers so that they can help hedgehogs thrive whilst still providing appropriate and safe facilities.

With the help of hedgehog expert Dr Pat Morris, formerly of Royal Holloway University of London, we have developed special training for green space managers and wardens. By attending one of our training days they will learn about the needs of hedgehogs and take away practical management solutions to put straight into action. In March we assembled a team of trusted trainers and training days will take place across the country over the next couple of years, with at least four in 2013.

BHPS works with many hedgehog carers, and is helping them to improve record-keeping, including the careful use of tags to see what happens to the animals they release. They are also developing more general hedgehog courses for people interested in helping.

If we are going to give practical advice on hedgehog-friendly habitat management and reduce some of the more easily avoidable threats, we must be clear what's going on so that we don't make matters worse. Research is underway to quantify the differing effects of physical barriers such as major roads on isolated hedgehog populations; to examine the impact of different farming practices; to see how hedgehogs use different types of countryside and to assess the effects of agro-chemicals. We are testing the best way to manage hedgerows as nesting areas, dispersal routes and food sources for hedgehogs.

### Carry on counting

Our vital monitoring of hedgehogs will continue. We are currently verifying whether newly designed hedgehog tunnels that record footprints, and a biochemical test to detect a hedgehog parasite carried by slugs, can be reliable ways of recording hedgehog presence even when you don't see them. This knowledge could be really useful, in relation to planning applications for example. And where new developments are approved, we will be encouraging the use of hedgehog-friendly garden fencing that we have been developing with Betafence, a fencing manufacturer.

We will take the lessons learned from all our research directly to land owners large and small so that the knowledge can be put to immediate, practical use. We will work to persuade the government to reward hedgehog-friendly rural management through the agri-environmental grants schemes. And we will advise anyone on individual steps that can be taken to help. Together, we can save the hedgehog.

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Bobby Jo Clow

saving BIG cats AND WILD dogs

# EXTREME DOGS

**JAN KAMLER** OF WILDCRU IS LIVING HIS DREAM OF WORKING WITH ASIA'S ENIGMATIC DHOLE.

## DHOLES

I've been interested in wolves and their relatives for as long as I can remember. As a little boy I watched the movie *Never Cry Wolf* and decided then that I wanted to be a wolf biologist, and travel to remote and inaccessible areas to study and learn about them. That was a big dream for a little boy from Kansas, where even visiting a neighbouring state was seen as a big deal. Also, there weren't any wolves in Kansas, the last few having been killed off more than 100 years ago to make room for cattle. But Kansas still had plenty of coyotes, smaller relatives of wolves, and these became the subject of my Masters degree. After capturing and learning about the cunning and intelligent coyote, I knew I was hooked on canids for life. So for my PhD, I moved to Texas to study the ecology and interactions of coyotes and swift foxes, a species of concern. Afterwards I was fortunate to get a scholarship to conduct research at an institute in eastern Poland for two years, where I studied the ecology of red deer and their interactions with wolves. Next I moved to South Africa, where I worked with cape foxes, bat-eared foxes, and black-backed jackals. Having gained experience with so many different canids, I resolved that my next species should be the most extreme, and one of the most endangered – the dhole.

Dholes, also called Asiatic wild dogs, are nature's version of a jungle wolf. Smaller but more agile than a grey wolf, dholes are unusual in many ways. Morphologically, they are specialised for an extreme form of meat-eating, termed hypercarnivory. Of 36 species of canids worldwide, only three are classified as hypercarnivores: dholes, African wild dogs, and bush dogs. All three have enhanced slicing teeth in the sides of the mouth, and reduced molars compared with other canids, restricting their diet to pure flesh. Dholes show the most extreme adaptation to hypercarnivory, with one fewer set of molars than the others. Additionally, female dholes have more nipples than all other canids (up to 16 compared with a more usual 6–10) allowing them to suckle large litters. These large litters result in dholes having the largest pack sizes of any dog (typically 10–20 but up to 30). These large groups are needed to hunt and feed such large families.

### Top of the heap

Dholes are also extreme ecologically. They hunt and consume more prey than the tigers and leopards they live alongside, and probably have a greater impact on prey numbers and ecosystem functions than any other large carnivore in eastern Asia. As apex predators, dholes play a vital role in the maintenance of healthy ecosystems. But they also require more space than any other large carnivore in eastern Asia – perhaps five times more than tigers, for example. This makes them vulnerable, and may partly explain their drastic decline of late.

Like everything else to do with dholes, their rate of disappearance is extreme. At one time they were found from the Russian Far East to Indonesia, and west through India. But dholes have disappeared from more than 80% of their range in the last 50 years – one of the most extreme range contractions of any large carnivore in Asia. They are now completely absent from the northern part of their range. Their only remaining stronghold is India, with small fragmented populations scattered elsewhere in Southeast Asia. The IUCN estimates that fewer than 2 500 mature individuals survive in the wild, and population declines are expected to continue. Although not widely acknowledged, these numbers mean dholes are now rarer than wild tigers or even snow leopards. Alarmingly, the reasons for their decline are unknown, although factors

Bobby Jo Clow

***Dholes need more space and more prey than other large hunters to support their huge families and exclusively carnivorous lifestyle. Large areas of suitable habitat are increasingly difficult to find.***

such as habitat loss, low prey numbers, human persecution, and disease are thought to be involved.

Given their increasing scarcity, it is rather difficult to study dholes. For my first encounter with the species I had to move to the small Himalayan kingdom of Bhutan, where I assisted the government with research on the distribution and diet of dholes, which produced recommendations for reducing their predation on livestock. I then moved to a remote part of northern Laos to study the diet, prey selection, and activity of dholes in one of the largest protected areas in the country. This research showed that dholes have a rather narrow niche because they feed only during the daytime on relatively few deer species. This convinced me that conserving dholes means conserving their prey.

**PTES steps in**

In October 2012, I moved to Cambodia, and with support from PTES began the largest project ever undertaken on dholes. The factors that make dholes so extreme also make them extremely difficult to conserve. Although it's clear dholes need more food and space than other carnivores their size, we don't yet even know their minimum ecological requirements. To help obtain this vital information I'm conducting research in the Mondulkiri Protection Forest in eastern Cambodia. I'm planning to find out how big a protected area needs to be to support a dhole population. I'll be fitting satellite collars on one or two dholes from at least four packs, in the first study of its kind. This will allow us to monitor their movements and determine the space they need to hunt and raise families. I'll also be collecting dhole poo, which will be dissected in a laboratory, allowing us to determine what dholes prefer to eat, and how many prey they need over a year to survive. With this vital information in hand, we can calculate the minimum ecological needs of dholes, and what it will take to conserve them on a long-term basis.

While tracking dholes through the forests in one of the most remote areas of Cambodia, I'm often reminded of my childhood dream. Then the roar of a wild elephant or the thundering hooves of a herd of banteng will make me quickly realise – I'm not in Kansas anymore.

**Dr Jan Kamler** is a postdoctoral reseacher for the Widlife Conservation Research Unit at the University of Oxford.



# Life in the energy fields

**PHIL WHEELER** AND **SILVIU PETROVAN** OF THE UNIVERSITY OF HULL REPORT ON THEIR PROJECT LOOKING INTO THE IMPACTS ON WILDLIFE OF FAST-GROWING NEW CROPS BEING GROWN TO FUEL OUR HUNGRY POWER STATIONS.

## BROWN HARES

IN THE PUSH to use more renewable energy sources, markets have emerged for 'biomass energy crops' which are grown to be burned as fuel, often in power stations. In the UK short rotation coppice willow and the 'elephant grass', *Miscanthus,* are the most commonly grown. Planting these crops has a major effect on how our farmland looks and functions: *Miscanthus* for example is a tall Asian grass that grows up to three metres high and is harvested in early spring, out of sync with most other arable practice. It is essential we understand how these crops affect farmland wildlife so we know what risks or opportunities will emerge as they are planted.

With the help of a grant from PTES we looked at how brown hares, our most iconic farmland mammal, and one that declined dramatically through the 20th century, is faring amongst *Miscanthus* crops. Our results were surprising: far from avoiding this giant alien grass, hares used it extensively for resting in and areas planted with it had very high hare numbers. The dense grass seemed to provide excellent cover, maybe fulfilling a role that lost hedgerows, field margins and fallow land would have played in the past. There was a surprising amount of weedy understory in amongst the crop and in patches where the *Miscanthus* plants had failed, weeds flourished to provide good feeding habitat too. However hares in very extensive, uniform *Miscanthus* crops had bigger home ranges and were at lower densities than elsewhere, so it seems the way this crop is planted in the landscape is important in determining whether it is beneficial for hares or damaging. Although we found potential benefits for hares from biomass crops, it is concerning that as they are planted more widely, we know very little about how they will affect our farmland wildlife. Continuing research is vital in this emerging area.

***Up in smoke... solid fuel power stations are increasingly being fed renewable biomass in place of fossil fuels. It's a step towards sustainability but the impacts of these very different crops on farmland wildlife have yet to be properly assessed.***

Silviu Petrovan: Inset iStockphoto.com/enviromantic

BATS AND LANDSCAPE

istockphoto.com/gudella; Kirsty Park; Elisa Fuentes-Montemayor

# Signs of recovery for Scottish woodland bats

WOODLAND PLANTING SCHEMES HAVE BEEN A FEATURE OF LANDSCAPE REGENERATION PROJECTS FOR 20 YEARS. RESEARCH AT THE UNIVERSITY OF STIRLING HAS BEEN FINDING OUT HOW WELL THESE SCHEMES ADDRESS THE HABITAT NEEDS OF SCOTTISH BATS

IF THERE WERE ESTATE AGENCIES for bats, the 'des res' snapped up first would always be the woodland home. Not only do wooded areas offer ideal roosting spots, they also support plenty of insect prey.

But the UK's woodland cover has been drastically reduced by long term deforestation. The remaining patches of woodland aren't as dense as they were and have a lower diversity of tree species.

Over the last 20 years, schemes have been addressing the problem by aiming to increase the amount and quality of woodland on agricultural land. Dr Kirsty Park and Elisa Fuentes-Montemayor at Stirling University are reviewing the contribution that woodlands created under agri-environment schemes are making in providing suitable habitats for bats and their prey in Scotland – the first time this kind of research has been carried out.

The preliminary results are in, and they're encouraging. The research shows that the extent of woodland in Scotland has increased by 12% in 15 years. The tree cover has become more compact, and wooded areas are less isolated – all positive news for bats.

Now Elisa has carried out this important groundwork, the information will be compared to the habitat requirements of bats and the insects they eat. This will show us the impact of the woodland-creation schemes on bat conservation. In the long run, this will help inform policy recommendations for future woodland-creation schemes, as well as forming a starting point for further research.

'Whilst there is a lot of woodland being planted in the UK' says Kirsty, 'there is currently little monitoring of these new woodlands. This work will provide much needed information about the effects of woodland creation and management on bats and wider biodiversity'.

MELANIE CLAYTON

SCOTTISH BEAVER TRIAL

# Beavers go to work

**SIMON JONES** SENDS NEWS FROM KNAPDALE OF DEVELOPMENTS IN THE SCOTTISH BEAVER TRIAL.

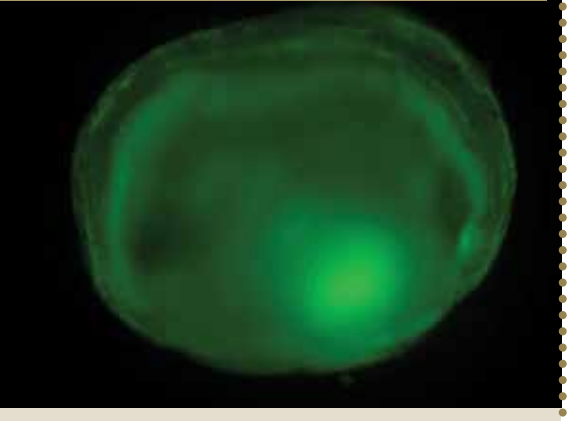
The beavers introduced to Knapdale in 2009 as part of a trial co-funded by PTES have spent the winter extending their lodge and dam infrastructure and constructing new canals into the surrounding woodland. This is real ecosystem engineering, and explains why there is a beaver on the crest of the Institution of Civil Engineers (inset).

Relationships among the beavers continue to provide the monitoring team with intrigue, scandal, joy and heartache in almost equal measure. The adult male of the Loch Dubh family, Bjornar, appears to have abandoned his aging partner Katrina and paired with his adult daughter Millie, setting up home on nearby Loch Coille Bharr. Such goings-on are not unusual in beavers – two other pairs at Knapdale have already swapped partners earlier in the trial, and inter-family pairings are not unknown in other beaver populations. It is possible that the kits seen in the area last year were the offspring of Millie and Bjornar, but sadly none have been seen since the autumn. They may reappear, but field operations manager Roisin Campbell-Palmer thinks this is unlikely. On a positive note, the female kit born last year to new parents Trude and Eoghann on Lochan Buic is still doing well.

The SBT field team have been carrying out health checks and fitting the animals with new geotags and depth-temperature recorders that will provide more valuable data during the coming year.

SBT

FRESHWATER PEARL MUSSEL



Louise Lavictoire

# Glow with the flow

## FLUORESCENT DYE HELPS KEEP TRACK OF THREATENED FRESHWATER MOLLUSCS

THE FRESHWATER PEARL mussel is critically endangered and declining across its range. A captive breeding programme for English populations was established at the Freshwater Biological Association (FBA) in Cumbria in 2007. Adult mussels from nine different English rivers are currently held at the FBA for two reasons: as a genetic 'ark' to protect populations from local extinction, and for captive breeding purposes.

The life history of each mussel involves a parasitic stage when it lives attached to the gills of salmonid fish, before juveniles drop off into river gravels where they develop to maturity. At this early free-living stage they are tiny, very difficult to find and therefore to monitor. Labelling them in some way would make monitoring faster and more efficient, but the animals are much too small to be tagged, and glues or paints may be toxic to them.

With PTES support, Louise Lavictoire has been looking into the use of a fluorescent compound to label young mussels. Calcein is a dye that binds to the calcium incorporated into the growing edge of the juvenile mussel shell. When exposed to ultraviolet (UV) light, the dye glows, thus aiding the identification of juveniles and helping to distinguish different juvenile cohorts with different marking regimes.

Louise's results suggest that immersion in calcein does the young mussels no harm in the medium term, and that it is a viable method for marking. A longer term study is required to see if there are any chronic effects on growth and survival; the juveniles used for this experiment will continue to be monitored.

PTES USES A LOT OF DATA COLLECTED BY VOLUNTEERS. EVERY CONTRIBUTION IS VALUABLE, BUT HOW MUCH STORE CAN WE SET BY IT? WE FUNDED **PHIL BAKER** TO ASK:

# Is 'citizen science' reliable?

RECORDING URBAN mammals is tricky, because private land is not easily observable. Studies of urban wildlife often rely upon information supplied by householders, raising concerns about how much respondents really know about wildlife. Helped by students at the University of Reading, I've conducted a study to test householders' mammal identification skills and their perception of how much each species uses their garden.

We interviewed people outside supermarkets throughout Reading. Each was asked to identify colour photographs of ten species. As a rule interviewees were readily able to identify charismatic and well-known species such as fox, badger, hedgehog, although not even these were identified correctly by everyone. Rather worryingly, only 4 to 41% of interviewees correctly identified more unusual species including weasel and Reeves' muntjac, and there was a lot of confusion over morphologically similar species such as wood mouse, common shrew, brown rat, bank vole. Often species were identified rather loosely – for example 'mouse' or 'bat'.

Knowledge relating to mammal activity in householder's own back yard was investigated by first asking participants to predict the likelihood of 11 different species appearing in their garden in a given five-day period. We then surveyed the gardens using small mammal traps and remote activated cameras.

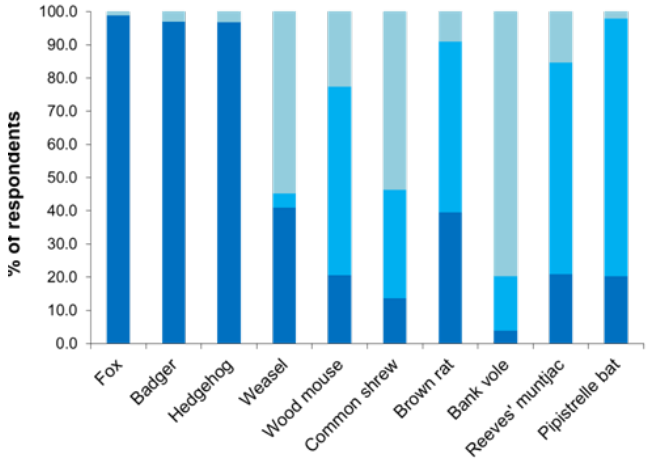
iStockphoto.com/GlobalP

In general, householder predictions of presence or absence were accurate for larger species, but success was markedly lower for small mammals. There was a particularly high disparity concerning predictions for house mice and wood mice. It appeared that subjects were often misidentifying wood mice as house mice.

Overall, our study suggests that urban householders are good at noticing and identifying large mammal species. Data on patterns of abundance for these species based on information from residents are likely to be fairly reliable, although not 100% accurate. Conversely, members of the general public appear less knowledgeable of smaller species such as mice, voles and shrews and additional guidance may be required to help householders contribute information on these species.

iStockphoto.com/creativenature_nl

This is valuable information which PTES can use to support volunteers and ensure future surveys continue to generate more valuable data on Britain's mammals.




**This chart shows the accuracy with which supermarket customers in Reading were able to identify 10 urban mammals. Foxes proved almost universally recognised, while bank voles (above) were very poorly known, despite being frequent visitors to suburban parks and gardens.**

PHILIPPINE CROCODILES

# Learning to live with crocodile neighbours

PTES-FUNDED WORK IN THE PHILIPPINES IS HELPING TO RENEW RESPECT FOR THE ISLANDS' GREAT REPTILES.

DOMINIC RODRIGUEZ of the Mabuwaya Foundation has been using PTES funding to conserve crocodiles in Dinang Creek sanctuary and to improve relationships between the reptiles and the people who live and farm alongside them.

In a recent report to PTES Dominic explained how regular surveys in the sanctuary revealed the existence of three crocodile nests last year. These were subsequently protected, resulting in the successful hatching of 38 eggs. This meant that 17 baby crocodiles could be taken to be raised under captive conditions for two years to increase their survival chances before being released back into the wild. Meanwhile the team has been addressing the problems of deforestation in the area by planting buffer zones around the sanctuary, with forest tree seedlings, bamboo and fruit trees. The new planting is protected from grazing and browsing animals by new bamboo fences, and local farmers and householders have been involved and provided with training in reforestation techniques. Meanwhile, 60 pig pens were constructed in neighbouring villages to keep precious livestock safe from wandering crocs. The communities have also benefitted from the installation of two pump wells, which now supply 15 families with clean water. Such tangible benefits to communities alongside the sanctuary are a great help in boosting local support for conservation.

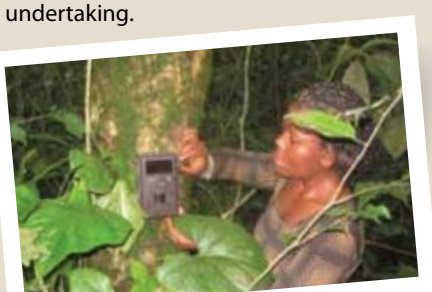
A further PR boost came when the Dinang Creek featured on Philippine national television as part of a series called *Born to be Wild*, documenting crocodile conservation in San Mariano. The project still has a further two years to run.

GORILLAS AND CHIMPANZEES

# Finding common ground in Cameroon

IN THE BIODIVERSE HIGHLAND FORESTS OF SOUTHWEST CAMEROON, PLANS FOR A NEW SANCTUARY AND DISPERSAL CORRIDOR FOR GREAT APES AND OTHER WILDLIFE ARE NEARING COMPLETION.

'LET'S CREATE a wildlife reserve.' It sounds an obvious and easy first step in the conservation of species in one of the world's biodiversity hotspots. In fact, just getting to this starting point is a great achievement, requiring many years of preparation, surveying, monitoring, consultation and engagement with local communities and officialdom at every level. It is a massive undertaking.



Hoping camera-shy gorillas will put in an appearance

In 2010 PTES awarded funding to the Environment and Rural Development Foundation (ERDF) of Cameroon to conduct work on conserving the Cross River and Nigeria-Cameroon subspecies of gorilla and chimpanzee in an area of southwestern Cameroon known as the Lebiale-Mone forest landscape. But this was part of a far bigger project whose aims included the creation of a new reserve – the Tofala Hills Wildlife Sanctuary, which will serve not only to protect apes and other wildlife but form a vital corridor linking populations across the highland forest ecosystems of the region.

As part of the set-up process, the team has had to overcome some local concerns – inevitable in an area where almost every village owes its livelihood to the land, through farming, hunting, logging and non-timber forest products. Progress has depended on sensitivity to these concerns and full engagement with village councils, chiefs, local organisations, farmers, women's associations and even poachers. The survey and bio-monitoring team has employed mainly local people, trained and supported by monthly visits from ERDF staff. The team includes four former poachers who have been retrained as field assistants/eco guards. So far monitoring has yielded over 200 signs of great ape activity, including sleeping nests. The animals themselves have remained elusive, but the team has been trained in the use of camera traps, and hope that further funding can be found to increase their inadequate total of three cameras to cover the area.

The final outline of the proposed new sanctuary has now been mapped and all the statutory requirements for establishing the reserve have been met. All that remains is final ratification by the Cameroon Prime Minister. Congratulations to everyone involved for a wonderful effort.

# KIDS GONE WILD!

THE PTES JUNIOR SECTION IS GOING FROM STRENGTH TO STRENGTH, SAYS OUTREACH OFFICER **EMILY JONES**. IS YOUR WILD CHILD A MEMBER?

SINCE ITS EARLY DAYS in the 1970s, PTES has had passionate and committed supporters, including many youngsters. To their great credit, the majority of today's kids show great concern for their environment and interest in the natural world. In 2008 we set up a junior section to PTES called *Kids Gone Wild*.

Led by Webster the Otter, the club offers activities, newsletters, competitions and events for primary-age children. We aim to enhance their natural interest and empower them to make a difference to their world. *KGW* is a great first step towards becoming a PTES supporter – these youngsters really are our future.

Funds raised through *KGW* go directly into conservation projects. Many of the children conduct fundraising efforts such as cake sales and sponsored events. They can see how their money is spent through our newsletter and website. We never ask children directly for donations.

A year's *KGW* membership costs £15. Each member receives a welcome pack, quarterly newsletters and seasonal challenges, dedicated webpages and *Ask an Expert* email, discounts on *Wildlife Encounters*, a birthday card and an annual renewal gift. For details on how to join, see the enclosed leaflet or visit www.ptes.org/joinkids.

'I've been at work in my pond and conservation corner. I've seen four frogs and two large common toads. I found a hole in the lining of the pond but me and my dad repaired it. Also I found a larva. I used the fact sheet you sent and all of my identifying skills and I have decided that it was not a stag beetle larva. P.S. I received your newsletter, it is BRILLIANT!!!!!!'
- Sam

**Giselle (left) and Charlie (below) are committed *KGW* members. Another member, George, got his classmates to design dormouse posters. This design, by classmate Jo-Yi, will be displayed at the Isle of Wight Steam Railway adjacent to our Briddlesford reserve.**

'KGW encourages me to think about endangered animals around the world. One of the many great things about the club is the eco-challenges. These are things to do that help the environment. I love being in this fantastic club, and knowing I'm helping animals.'
-Giselle


'Thank you for keeping this perfect birthday gift so inexpensive'
- Mrs Craig

Do it YOURSELF...

# FIELD SIGNS Part 1

## with Essex Wildlife Trust expert Darren Tansley

Darren Tansley is Water for Wildlife Officer at Essex Wildlife Trust and teaches riparian mammal ecology for the Field Studies Council.

OBSERVING WILD MAMMALS IS A RARE TREAT BUT THEIR ELUSIVE NATURE MAKES SURVEYING THEM A CHALLENGE. BEFORE YOU RUSH OUT TO BUY NIGHT VISION SCOPES AND AN INFRARED TRAIL CAMERA, TAKE TIME TO LEARN TO INTERPRET EXISTING EVIDENCE. FIRST, LET'S TACKLE HERBIVORE FEEDING SIGNS.

I'LL NEVER FORGET the first time I found a spot where water voles had been feeding on a Suffolk riverbank. Suddenly the piles of cut reed, little muddy pathways and the brown 'tic-tac' shaped droppings all made sense. Identifying mammals from the signs they leave behind is both a science and an art; it needs practice but is immensely satisfying. Unlike your birder friends you will spend your time staring at the ground, occasionally concussing yourself on low hanging branches, but the countryside will never have appeared so full of life.

Dave Bevan

Rabbit grazing creates the short but biodiverse swards of British downlands and is essential in maintaining this iconic landscape and the wildlife communities associated with it.

## Landscape scale nibbling...

Ever looked along a hedgerow or woodland edge and noticed a sharp line where the leaves seem to have been clipped at a height of 60 to120cm? This is probably a deer 'browse line' caused by the nibbling of foliage from the lowest branches. But also check out grassland or arable field margins where vegetation is cropped or nibbled by rabbits and brown hares. Lagomorphs clip the stems with sharp, precise cuts, while deer 'strip' the stems from above, leaving little ragged strips or tendrils where their teeth have dragged along the sides.

Darren Tansley EWT

Deer 'browse lines' may appear in woods and hedges. In extreme cases it is possible to look under a browse line in a wood and see through to the other side.

Hares and rabbits feeding on arable crops leave clipped areas similar to water vole feeding stations. Large areas of crop may be grazed off entirely.

## Vole clippings

Look alongside streams, brooks and rivers in areas of tall grass or herbs, for piles of chopped vegetation. Field voles cut grass stems or small rushes into pieces 2–4cm long and leave them in these distinctive 'feeding stations' along their tunnel-like runs in the grass. Part the grass in any overgrown area and you might find these trackways and feeding signs.

Water voles often snip their food into 8–12cm lengths with an obvious 45° cut at the end and leave them in bundles along the water's edge. You'll need to get in under the reeds or vegetation to find them as water voles favour larger plants such as reed, sedge and rush. There is some overlap with field vole feeding signs, so beware! Also look out for vole 'lawns' of closely cropped grass surrounding burrows on the bank top. This could be the sign of a female housebound by dependent young.

Darren Tansley EWT

Darren Tansley EWT

This store of acorns, haws, hazlenuts and other woodland bounty would have kept a wood mouse well fed during the worst of the winter. Caches sometimes contain several kilograms of stored food.

## Stashed cache

Food caching is a common habit of many rodents and most hide their stores in underground burrow systems. Wood mice and yellow-necked mice, however, are superb climbers, so look for stashes of acorn, hazelnuts or haw stones in tree hollows, bird nests and artificial nest boxes. Mice and voles open a hole in nuts or fruit stones to get to the kernel, so look closely for tooth marks (see box below).

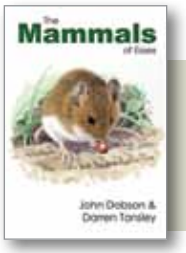
Squirrels, both red and grey, cache large numbers of beech mast, acorns and pine cones by burying them. Grey squirrels will also eat unripe hazelnuts and crack the shells open with their powerful jaws rather than opening a circular hole.

iStockphoto.com/GlobalP

## Cone cores

Squirrels are very good at stripping the seeds from pine cones, so look for the distinctive chewed cones in any coniferous woodland. Many of these cones will have been buried and re-excavated as winter sets in, especially in woodlands with a high squirrel population. Look for digging activity around trees with old squirrel dreys (nests) as some animals remain in the area in which they were born.

Darren Tansley EWT




Darren is co-author of *The Mammals of Essex,* which will be available from Essex Wildlife Trust from September. It contains many insights into mammal field signs.

# DIY...

## ...Field notes

If you see an interesting sign in the field but can't identify it on the spot, here are five steps to help you get to an answer.

### Take notes

Record details of the location and habitat to give the signs context in the landscape. These can hint at what type of animal may be present.

### Complete the puzzle

Look for other signs nearby such as droppings, tracks, nests or burrows. These may confirm your ID in the field.

### Take it with you

There are very few occasions where it is inappropriate to take a small sample of the feeding signs, as generally these are the discarded remains of food that has already been eaten. NEVER remove an uneaten food cache though.

### Snap happy

If you can't take it with you, then reach for your camera. Always place something in shot for scale; a coin will do. Take several photos to capture all the details. Remember that even the experts may not be able to help if your photo is fuzzy. You can share pictures with other enthusiasts on www.ispot.org.uk.

### Art v science

No matter how good you are there will be field signs that cannot accurately be identified. Ultimately, recognising these limitations is the sign of a good surveyor.

iStockphoto.com/itsjustluck

## Nibbled nuts

Rodents such as mice, voles, dormice and squirrels all open nuts in a characteristic way, for example leaving distinctive marks on the inside and outside, or chisel marks on the inner edge. These markings are tiny so if you don't own a hand lens, look through your binoculars the wrong way round.

**Squirrels**
Young squirrels break ragged, sharp fragments off the shell, while their more proficient parents simply snap the shell in half.

**Wood or yellow-necked mouse**
Ridged tooth marks are present on the inside rim and there are tooth marks around the outer shell too.

**Bank or field vole**
The hole has ridged tooth marks on the inside rim but no tooth marks on the outside.

**Hazel dormouse**
The circular hole is surrounded by diagonal tooth marks on the outside of the shell but the totally smooth bevelled inner edge is unlike that cut by any other small mammal.

Illustrations: Amy-Jane Beer, Wildstory

# Parting shot

iStockphoto.com/jamenpercy

African wild dogs, also known as painted hunting dogs because of their colourful and individually unique coat markings, are in trouble. Centuries of habitat loss, persecution, and competition with other pressurised species have reduced the population to fewer than 5 000, spread over a vast area of southern and eastern Africa. Packs occupy home ranges so large that few reserves or national parks can sustain them, and there is invariably conflict with people when they venture elsewhere. Through our *Saving Big Cats and Wild Dogs* campaign, PTES funds urgent work reducing conflict between people and wild dogs and reconnecting areas of living space.

The threat is an urgent concern and your support is vital.

Thank you.

people's trust for
**endangered species**