people's
trust for
endangered
species

Dormouse Mitigation Conference 2018

Natural History Museum, London
Friday 16th November

Welcome to the Dormouse Mitigation Conference 2018

People's Trust for Endangered Species is at the heart of dormouse conservation. We coordinate the national monitoring that yields the data against which habitat improvement, reintroductions and other conservation effort is measured and planned. But the news from the monitoring programme is not good. The *State of Britain's Dormice 2016* report showed that dormouse numbers declined by 38% since 2000, a finding supported by subsequent academic papers.

As well as monitoring the UK dormouse population, we also gather one-off records and collect dormice license return data from license holders. These data contribute to the National Dormouse Database which informs us of the current dormouse range. Here the news is not good either; in the UK dormice are thought to be extinct in 17 counties over the past 100 years.

So what are we doing about the decline? We support volunteers who undertake the ongoing monitoring programme and collect data; we manage the dormouse reintroduction programme to restore dormice to those counties where they've gone; we support and fund research to inform us about the best way to conserve the species in the UK; we train both volunteers and ecological consultants on dormouse ecology, surveying and habitat management; and we act as a link between the conservation sector, the professional ecological sector and the statutory agencies.

We're hugely grateful to our volunteers who frequently visit rich, diverse woodlands to collect monitoring data, but those volunteers are rarely able to influence local woodland or hedgerow management. By contrast, ecological consultants will often be working on species-poor sites with small dormouse populations but the advice they give, in both the short and long term, will have a significant impact on the habitat and its future suitability for dormice.

There's been much recent work, both on dormouse survey techniques and how we might mitigate the negative impacts of development on local dormouse populations. So we think the time is right for a national mitigation conference to share the latest research, ideas and techniques to help achieve what we all desire - the long-term conservation hazel dormice in Britain.

Welcome to the Dormouse Mitigation Conference 2018.

Jill Nelson
CEO, People's Trust for Endangered Species

Conference information

Registration opens at 9am. Please make sure you sign in and collect your name badge and delegate bag. The conference begins at 10am.

Toilets are located down the stairs towards Exhibition Road, on the landing (only a few stairs down from the Flett theatre).

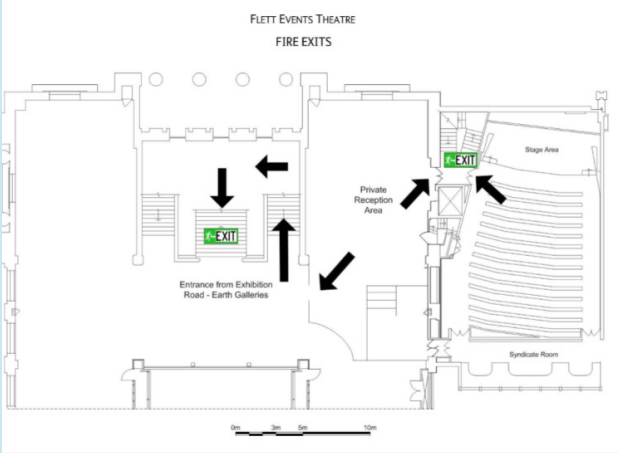
At the end of the day, please leave your name badge at the reception table.

Free WiFi is available, called 'NHM free WiFi', no password required.

Please turn off mobile phones while in the lecture theatre.

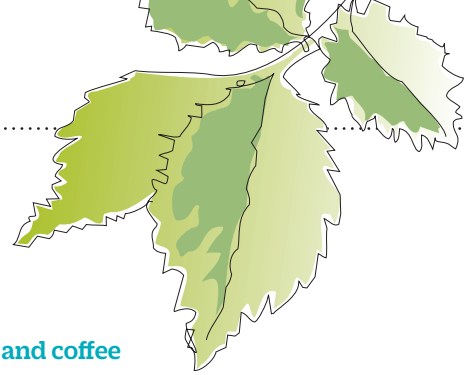
Follow us on Twitter @PTES #DormouseConf18

In the event of a fire, the alarms will sound and a voice announcement will either tell you to evacuate the building or await further instructions if the fire or incident is in another part of the building. If instructed to evacuate, please leave the building by the nearest fire exit, unless otherwise instructed by a member of NHM staff on duty.



The assembly point is the Exhibition Road, Earth Galleries entrance.

No smoking is permitted in the building and anyone smoking outside must be at least 10m away from the building.



Programme

9am	**Registration, tea and coffee**	
10am	Introduction	Tony Mitchell-Jones and Jill Nelson
10.10am	**A view of Dormouse Ecology and Conservation**	**Ian White**
10.30am	**Hibernation study**	**Leo Gubert**
10.50am	Questions from the floor	
11am	**Tea and coffee**	
11.30am	**Dormouse habitat creation and management**	**Rob Wolton**
11.50am	**Survey methodologies**	**Simone Bullion**
12.10pm	**Dormouse mitigtation handbook**	**Paul Chanin**
12.25pm	**Hedgehogs and development**	**Emily Wilson**
12.40pm	Questions from the floor	
12.50pm	**Lunch**	
1.50pm	**Surveying small sites**	**Diana Clark**
2.10pm	**Small arboreal bridge for dormice**	**Sophie Hughes**
2.30pm	**Mitigation and planning**	**Sarah Jennings and Stephen Carroll**
2.50pm	Questions from the floor	
3pm	**Tea and coffee**	
3.30pm	**Dormice in hedgerows - a case study**	**Ben Kite and Alison Hogan**
3.50pm	**NRW case studies**	**Jane Garner and Liz Halliwell**
4.10pm	Questions from the floor	
4.20pm	Closing remarks	Tony Mitchell-Jones
4.30pm	Close	

Speakers

Tony Mitchell-Jones (Chair) joined the PTES board of trustees in 2011. Before retiring, Tony was the mammal specialist at Natural England for over 32 years. He led conservation projects on a wide range of threatened mammals, many in partnership with PTES, and developed, or contributed to, conservation guidance, such as the Bat Worker's Manual and the Dormouse Conservation Handbook. He was editor-in-chief of the Atlas of European Mammals and contributed to several other mammal guides and handbooks.

Jill Nelson is Chief Executive of PTES which she has led since 2005. Prior to that Jill worked in science, primarily in public engagement, having been Head of Science Promotion at The Royal Society for 13 years and Director of Programmes at the British Science Association for seven years.

Ian White is the Dormouse and Training Officer for PTES and organizer of the Dormouse Mitigation Conference. Ian joined PTES in 2006, initially working on a short-term project to improve the landscape beyond dormouse reintroduction sites to facilitate dispersal. He now leads PTES' dormouse conservation work, with responsibility for dormouse training, managing dormouse reintroductions, and helping to coordinate and support the National Dormouse Monitoring Programme (NDMP).

A view on dormouse ecology and conservation

Hazel dormice are a well-studied species, but in the UK they're also a species that have shown both a population and range decline. In this overview of dormouse research and its implications for conservation, Ian will consider European and British work on dormice and what the results have shown us. He will discuss the current conservation strategy for dormice in the UK and will highlight the part that we can all play to try and ensure that this small enigmatic species has a future in the British Isles.

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Leo Gubert is a senior ecologist at Highways England with over 15 years' experience in the UK and abroad. He's worked regularly with hazel dormouse on a professional and academic basis (research, survey and development) and monitored a number of NDMP sites as a trainer and volunteer for the past 12 years. Leo is currently researching several aspects of dormouse ecology as part of a PhD at the University of Exeter.

Location, location, location. Where do dormice go in the winter?

Most studies on dormouse ecology and behaviour focus on the active season. However, little is known about their behaviour during the winter months hibernation. In Britain, hazel dormice can spend up to six months hibernating, from October through to May. During hibernation they are mostly inactive, vulnerable to disturbance and predation and previous studies indicated that a considerable part of the population does not survive. Leo will explore dormouse ecology during the winter months including data on hibernation nests and locations collected over a period of 10 years. He'll offer insight on where and how to find hibernation nests as well as other curiosities such as nest materials used, behaviour and movements.

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Rob Wolton is an independent ecologist living on his family's farm in Devon. Following Ph.D research on the social ecology of woodmice, he worked for Natural England for over 25 years in a variety of roles, including as national hedgerow specialist; a continuing passion. His interest in hazel dormice was sparked by noticing their nests in hedges on the farm and led to the publication of research into their nest site preferences with particular reference to hedge management. Currently he's working to update the Dormouse Conservation Handbook.

Dormouse habitat creation and management

It's recently become increasingly apparent that hazel dormice can have healthy populations in a wide range of habitats, including hedges and scrub, gardens and conifer plantations. In fact, any site may have breeding dormice provided it meets their basic needs of safe nesting sites. Mid-successional and edge woody habitats, whether within or outside woodlands, are especially favoured. Critically, though, no single site is likely to support dormice in the long term unless it either contains large areas of favourable habitat (some 20 ha or more), or is well connected to other quality habitat patches. Dormouse conservation requires landscape-sale thinking. Rob looks at key indicators of favourable habitat condition for dormice. He'll outline the management necessary to maintain these habitats in good condition.

Simone Bullion is Conservation Manager at Suffolk Wildlife Trust with a specialist interest in mammals. She's been involved in dormouse ecology and conservation for over 20 years, and has extensive experience of surveying dormice. In 2017, she was responsible for a PTES-funded project testing the effectiveness of footprint tunnels. Simone's one of the authors of the forthcoming 3rd Edition of the Dormouse Conservation Handbook.

Using footprint tunnels to track down hazel dormice

There are a variety of techniques for detecting hazel dormice. Simone will review these and elaborate on the use of footprint tunnels as a new survey tool. Dormice feet have distinctive triangular-shaped 'palm pads' which are readily distinguishable from other small mammals. Footprint tunnels have been found to be a highly effective technique for detecting dormouse presence in hedgerow and scrub habitats, and perform at least as well as nest tube and box surveys in closed canopy woodlands. She'll cover the benefits and disadvantages of the method as well as the recommended numbers of tunnels and survey duration.

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Paul Chanin is a semi-retired mammal ecologist who spent the last twenty years as an ecological consultant specialising in mammals, particularly badgers, otters and dormice. As a university lecturer in adult education, his research interests and publications mainly involved otters. More recently, Paul collaborated with (the late) Michael Woods, Leo Gubert and Simone Bullion on studies of dormice and methods of surveying them. He's currently working on the dormouse handbooks.

The third editions of the Dormouse Conservation Handbook

Since the first edition of the Handbook was published 22 years ago we've learned a great deal and there have been significant changes in their legal status.

Following publication of its mitigation guidance for water voles in 2016, the Mammal Society is issuing guidance on badgers, dormice and otters over the next couple years.

The needs of conservation managers working with dormouse habitat and of ecological consultants involved in development, the planning system and licensing differ. Consequently, there will be separate publications on Dormouse Conservation Management and on Dormouse Mitigation. Paul will outline the content of the two handbooks and discuss any significant changes proposed, subject to consultation with the Statutory Conservation Bodies and relevant NGOs.

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Emily Wilson manages the Hedgehog Street campaign on behalf of PTES and the British Hedgehog Preservation Society. Hedgehog Street inspires people to make their gardens hedgehog friendly and help bring the species back from the brink. The campaign also supports research, works with developers and planners, and designs courses for land managers. Emily has worked for several years in the conservation and animal welfare sector and hopes one day to make a fundamental change for animals and the environment and help inspire the next generation of conservationists.

Hedgehogs and development

We've lost over a third of our hedgehogs in just the past decade. This is a result of a combination of factors, including habitat loss, fragmentation, agricultural intensification, road kill and predation. Unfortunately, hedgehogs aren't afforded the same level of legislative protection that dormice receive. This is why Hedgehog Street has produced guidance to help ecologists 'think hedgehog'. We provide tips on mitigating for hedgehogs before, during and after development so that we can help conserve those hedgehogs that remain.

Download the guidance at **www.hedgehogstreet.org/developersguide**

HEDGEHOG STREET
CITY OF WILDLIFE

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Diana Clark (MSc, MCIEEM) has been a consultant ecologist since 2003 (with a few years out chasing bats and managing sites in NZ), and runs her own freelance consultancy business, Kou Ecology Associates. She also works part-time for CIEEM as their Project Officer for Wales, and enjoys being a member of her local bat group, as well as occasionally getting out to look for dormice.

Pragmatism and proportionality: approaches to surveying and methods of work at small sites.

Diana will explore some of the difficulties faced where sites are small and traditional survey methods might be considered over-onerous. Getting a balance between appropriate levels of effort, and ensuring that the financial burden of ecological survey work is proportionate to the risk of likely impact, is key. Diana will explore possible ways of doing this as well as how such an approach may be more valuable to wildlife in the long-term than standard surveys.

Please ask lots of questions and feel free to share your own experiences of how you approached 'the small-site problem'.

Koru Ecology Associates

koruecologyassociates@gmail.com

Sophie Hughes has a BSc in environmental science and an MSc in biodiversity conservation. Sophie is an Ecological Consultant, specialising in hazel dormouse ecology. Over the last few years, Sophie, in partnership with PTES, has reviewed the likely effectiveness of historic dormouse bridges in the UK. This led to the trial of a specific design of arboreal wildlife bridge to determine its suitability to reconnect fragmented dormouse habitat.

Evidence-based development of an arboreal wildlife bridge to prevent fragmentation and isolation of hazel dormouse habitat

During the 1990's it was common practice on development sites for areas of suitable dormouse habitat to be connected with rope bridges, despite not having been shown to work in the wild. After work by PTES and Cresswell Associates in 2009 demonstrated that captive dormice would travel through metal tubes, it then became common practice to base 'dormouse bridges' on this design, even though they also had never been shown to work with wild dormice.

Two designs of arboreal bridge have been shown to be used by wild dormice: an expensive and bespoke land bridge at Scotney Castle in Lamberhurst and a smaller suspended bridge in Japan. In 2015 PTES set up an experiment to test whether the Japanese design could work for hazel dormice and, at the same time, test whether they showed a preference for crossing on an arboreal structure or crossing on the ground. This work is now been complete and a commercial version has now been developed.

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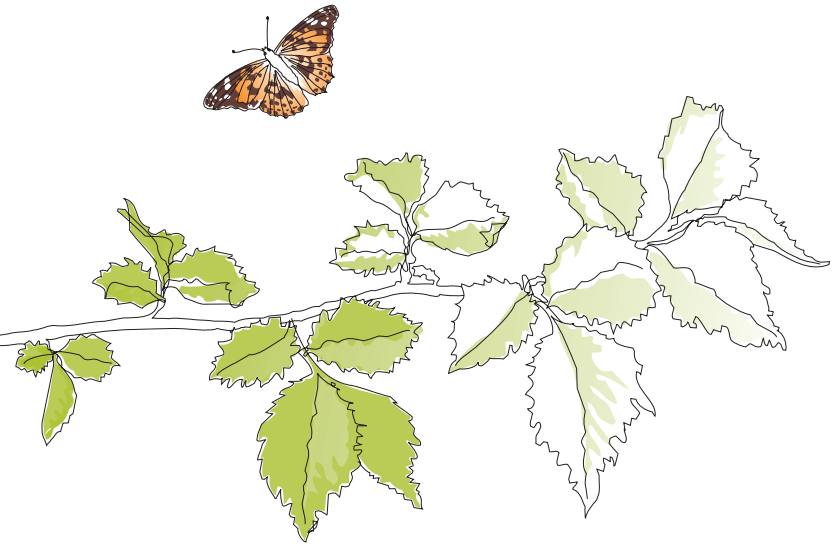

Sarah Jennings is County Ecologist at Devon County Council, dealing with a range of planning applications and infrastructure schemes (from quarries to highways maintenance) in a county full of dormice. She previously worked in a range of conservation roles with Suffolk County Council, RSPB, English Nature, WWF and BTCV. Despite working on dormouse issues for ten years, Sarah's only met one dormouse but has just set up a new box scheme in the hope of meeting more.

Stephen Carrol is Biodiversity Officer advising on wildlife and planning matters for a local planning authority in south Devon. He's also a Devon Mammal Group committee member and co-organiser of the annual Devon dormouse network meetings for the last 11 years. Stephen has been an NDMP site monitor for more than 15 years and is an occasional contributor to Dormouse Monitor.

Houses and mouse's: some news of the planning world from a Devon perspective

Following ecological consultants' surveys and reports, planning authorities must incorporate mitigation recommendations and EPS licensing requirements into planning decisions. Many planning authorities don't have access to in-house ecological advice for interpreting NE standing advice, EPS case law, or awareness of dormouse habitats. Planning authorities are also required to allocate sites for future development, typically without fully detailed survey information.

Stephen will outline some case histories from south Devon, where dormice are widespread and must routinely be accounted for in planning situations, with examples from small-scale, large-scale, and long-term developments, where the results of mitigation schemes can be reviewed. He'll also discuss an ad hoc system for addressing residual impacts, via commuted sums towards off-site dormouse conservation, that's been trialed in south Devon.

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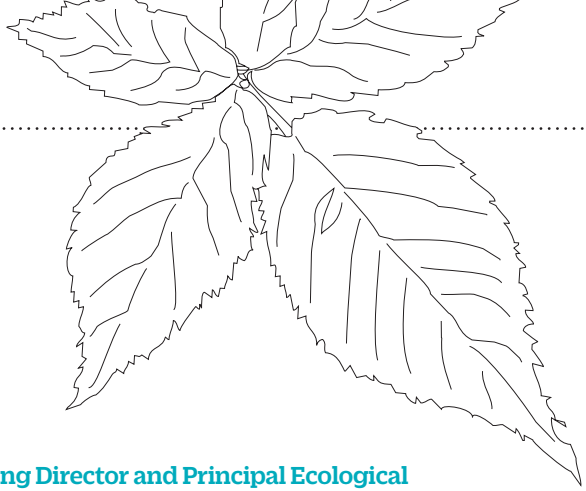

Ben Kite is Managing Director and Principal Ecological Consultant at Ecological Planning & Research Ltd in Hampshire. He's worked with hazel dormice since the early 2000s, initially as a conservation volunteer helping with the establishment of Surrey and then Hampshire Dormouse Groups. He's helped to monitor dormouse populations in both counties and trained up a number of dormouse surveyors to help monitor NDMP sites. Professionally, Ben carries out Ecological Impact Assessments for large-scale projects, some involving dormice, and is the named ecologist on a number of mitigation licences for the species.

Alison Hogan is a Director and Principal Ecological Consultant at Ecological Planning & Research Ltd. She's a member of the Hampshire Dormouse Group committee and has assisted in monitoring dormice in Surrey, Hampshire and the Isle of Wight for the past 10 years. As part of her work, Alison's helped in the production of dormouse mitigation licences and overseen their implementation and monitoring in relation to the construction of roads and housing.

Understanding and mitigating impacts on dormice in atypical habitats

Although there's a strong association between hazel dormice and 'old' biodiverse aboreal habitats (in particular ancient woodlands) the species often, and sometimes apparently unaccountably, turns up in surprising places. Attempting to predict when this might occur, understanding the impacts that might result, and working out what to do about them, can be complex. Alison will examine a series of case studies in which dormice occupy unusual habitats such as recently developed scrub and non-native ornamental garden hedgerows. She'll outline the approach that has been taken toward assessment and mitigation in these situations, including the difficulties encountered and lessons learned along the way.

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EPR | Ecological Planning & Research Ltd

Jane Garner is Species Team Leader for Natural Resources Wales in South Wales. Jane and the team advise on the conservation of a range of protected species including dormice, with particular focus on advising on planning and licence applications.

Dr Liz Halliwell is Mammal Ecologist for Natural Resources Wales. Liz provides specialist advice, guidance and strategic overview of issues relating to conserving and managing of terrestrial mammals Wales including dormice.

Learning from experience – the good, the bad and the ugly!

Natural Resources Wales is the licensing authority for European Protected Species in Wales and receives many consultations for development schemes affecting dormice. Jane and Liz will share their experience of best practice approaches in the preparation of dormouse mitigation schemes. They'll look at common issues arising from documents submitted in support of planning and licence applications.

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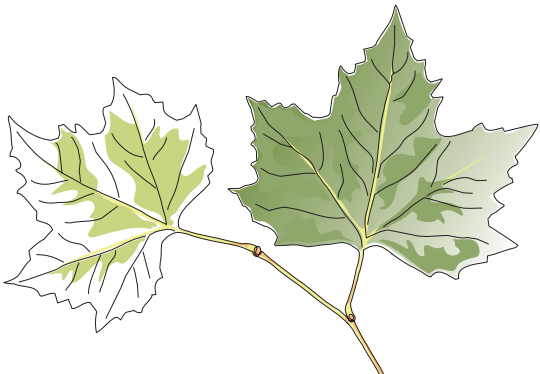
Cyfoeth Naturiol Cymru
Natural Resources Wales



Stands

1. People's Trust for Endangered Species In the UK, almost two-thirds of species have declined in the last 50 years. Globally, around a quarter of mammals face extinction in the next three decades. We exist to stop this loss of wildlife.
www.ptes.org

2. Animex International provides wildlife mitigation solutions worldwide. They carry out research and development to ensure their products provide improved habitat connectivity, lessening impacts on threatened species.
www.animexfencing.com

3. CIEEM is the leading professional membership body representing and supporting ecologists and environmental managers in the UK, Ireland and abroad. Our vision is of a society which values the natural environment and recognises the contribution of professional ecologists and environmental managers to its conservation.
www.cieem.net

4. Natural England is the government's adviser for the natural environment in England, helping to protect England's nature and landscapes for people to enjoy and for the services they provide. Susie Moore and Karen Watson will be present at a stand during breaks and lunch so that delegates can discuss dormouse mitigation licensing matters.

Susie Moore works in the Natural England Wildlife Licensing Service. Amongst other roles within licensing, she assesses the Favourable Conservation Status test for dormouse mitigation licence applications.

Karen Watson is a Wildlife Adviser for Natural England. Part of her role involves assessing the Favourable Conservation Status test for dormouse European Protected Species licence applications.

The Natural History Museum

The Natural History Museum is home to life and earth science specimens comprising some 80 million items within five main collections: botany, entomology, mineralogy, paleontology and zoology. The museum is a centre of research specialising in taxonomy, identification and conservation. Many of the collections have great historical as well as scientific value, such as specimens collected by Charles Darwin. The museum is recognised as the pre-eminent centre of natural history and research of related fields in the world.

Delegates are very welcome to look around the museum in breaks but please be aware that the conference timings will be adhered to.

The Museum closes at 5.50pm.

Hidden gems

Some of nature's most unique and valuable treasures are on display in the Vault gallery.

See the world's largest collection of coloured diamonds, discover gems that glow in the dark, and marvel at rare meteorites from out of this world.

Explore the evolution of life on our planet in the From the Beginning gallery.

Discover early sea creatures, dinosaurs, mammals and ancient fossils. Find out how our solar system was formed, learn about the variety of life that's lived on our planet.

Explore 22 objects spanning 4.5 billion years of the Earth's history in the Cadogan Gallery.

Each exhibit tells a remarkable story and has been chosen for its scientific, historical and cultural importance.

people's trust for endangered species

There is nothing natural or inevitable about the alarming rate at which we're losing animals and their living landscapes. It's absolutely avoidable.

PTES is an international conservation charity, conserving animals and their habitats. We're passionate about protecting animals facing extinction in vulnerable habitats, but we also know that passion isn't enough: successful conservation is based on sound scientific evidence.

Conserving the natural world is a huge challenge, and one that no-one can achieve alone. Effective conservation is only achieved by people working together. Scientists, local communities, landowners, the public, volunteers and partner organisations all play a part.

The foundation is rigorous research, both to assess the need and urgency of the problem and to measure the impact of our work. By sharing our data and knowledge with others we ensure value for money and avoid duplication or unsustainable conservation action.

For over 40 years our ground-breaking research has resulted in practical conservation action across the world, targeted where it's most needed and where it has maximum impact.

Some of our achievements:

- Introducing captive bred dormice back into 12 counties where they'd gone extinct, reversing the trend of their declining range in the UK.
- Mobilising over 55,000 Hedgehog Champions, creating hedgehog friendly gardens, and distributing advice to farmers on helping hedgehogs.
- Digitally mapping nearly 50,000 traditionally managed orchards across England and Wales, and supporting orchard owners.
- Nationally monitoring dormice, water voles, and other mammals along roads and in green spaces.
- Purchasing and managing the largest remaining block of rare ancient woodland on the Isle of Wight, restoring vital habitats to support populations of red squirrels and dormice.
- Conserving wild mammals in the UK through over a hundred conservation projects.
- Marking our 40th anniversary last year by launching Conservation Partnership grants for work on Persian leopards in Iran, snow leopards in Mongolia, giant otters in Peru, slow lorises in Indonesia and lions in Tanzania.