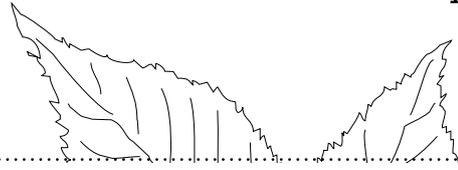


# The Dormouse Monitor

SUMMER 2017

people's  
trust for  
endangered  
species

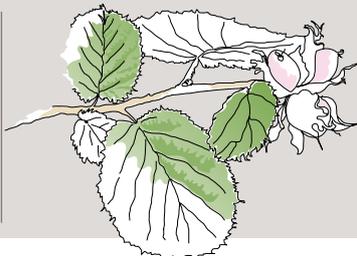


## Anthropogenic rewilding - is it possible in the UK?

Ben Kite and Phil Colebourn explain how ecologically rich, managed habitats can be rewilded in the British landscape.

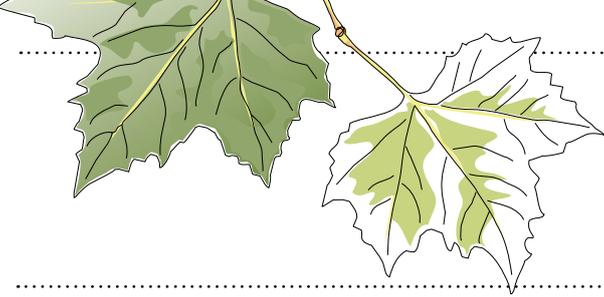


**Keeping dormice in captivity** Detlef Seibert discusses his husbandry techniques for keeping hazel dormice in captivity at his home in Germany.



**Ken West, in memorium** We pay tribute to Ken West, a long-term advocate of conserving British wildlife, in particular our native mammals.

**Devon & Cornwall mammal group** Stephen Carroll reports on the increasingly popular dormouse group, and its tenth annual meeting.



**03** Remembering Ken West, founder of the Wildwood Trust, Kent.

**04** Anthropogenic rewilding: an oxymoron? Can and should we try to return tracts of our countryside to their original state?

**08** The development of footprint tracking tubes to detect hazel dormice. A recent study at Sparsholt College yields exciting results.

**10** Ian White takes a closer look at hazel dormice in Kent, a county where we have been monitoring them since the onset of the NDMP.

**12** Gathering of nutters: Devon and Cornwall 10th annual dormouse meeting, Stephen Carroll reports.

**14** Keeping hazel dormice in captivity: Detlev Seibert explains how he houses and feeds the animals he keeps in his home in Germany.

**18** Emily Thomas has created maps of what other species are found in nest boxes throughout the UK.

**20** Unusual findings in a dormouse nest box. Nick Downs and James Sweetman report on finding a signal crayfish claw.



# In this issue



## Welcome



*We are truly sorry that we've lost a passionate advocate for British Wildlife with the passing of Ken West. Ken's name became synonymous with dormice and he worked tirelessly to raise awareness of their status and hail them as a flagship for conservation in Kent. He will be remembered with great fondness and respect for all he achieved.*

Editorial team: Nida Al-Fulaij, Susan Sharafi, Zoe Roden  
Illustrations: Hayley Cove

Cover image: Kerstin Hinze

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

**Contact us**  
The Dormouse Monitor  
3 Cloisters House  
8 Battersea Park Road  
London SW8 4BG

[www.ptes.org](http://www.ptes.org)  
[enquiries@ptes.org](mailto:enquiries@ptes.org)  
020 7498 4533

[facebook.com/ptes.org](https://www.facebook.com/ptes.org)  
[twitter.com/PTES](https://twitter.com/PTES)

people's  
trust for  
endangered  
species

*In the autumn many of us will be heading over to Belgium to attend the tenth international dormouse conference in Liege. I remember my first dormouse conference in Somerset, almost ten years ago. We're delighted to have the chance to meet friends and colleagues who have spent the last decade working hard to understand the ecology and conservation threats facing the many species of dormice worldwide. We look forward to sharing the current research and findings with you in later issues.*

Nida Al-Fulaij & Susan Sharafi

*Nida Al-Fulaij*

*Sharafi*

---

# Ken West, in memorium

Hazel Ryan, Senior Conservation Officer at the Wildwood Trust, shares her memories of Ken West, founder of the Kent Mammal Group.

It is with great sadness that we report the passing of Ken West in January. Ken was the founding member, first chairman, and subsequently president, of the Kent Mammal Group. He was a mentor, friend and inspiration to so many and will be greatly missed.

Ken founded the Kent Mammal Group in 1997 after returning to his home county of Kent at the end of a fascinating career, including work as a Royal Marine Commando, a decorated senior police officer in Africa, and highly successful entrepreneur. Ken's enthusiasm, passion and business acumen allowed him to develop the Kent Mammal Group into being one of the most effective and wealthy mammal groups in the country. Ken's contribution to mammal conservation was formally recognised by the Mammal Society when he received the award for 'Services to Mammalogy' in 2012.

I first met Ken at a Kent Mammal Group meeting shortly after the group had been formed. I didn't know anyone there but Ken was very welcoming and very enthusiastic about mammals and the group's activities. I went on to attend the Mammal Society weekend Mammal ID course that he ran in Deal and before long he was encouraging me to run the same course myself in

---

## Ken founded the Kent Mammal Group to raise awareness of mammals

---

Bromley. Ken was good at enthusing people and was also very persuasive!

He also got me my first job at Wildwood as water vole keeper and I am still there 14 years later! In 2004 Ken asked me if I would

take on co-ordinating the tetrad survey project. Little did I know that I would still be working on it today and the recent publication of the Kent Mammal Atlas is a testament to his vision of recruiting volunteers to survey much of the county.

He always had time to listen and would go out of his way to find solutions to problems or enlist help as he usually knew the right people.

His shrewd business acumen was invaluable to Kent Mammal Group as he set up both consultancy work and dormouse nest box sales which enabled the group to raise money to fund its research and conservation projects.

I also have fond memories of foreign trips with Ken, on safari in Namibia on a Mammal Society trip led by the late Michael Woods and trying to dance the salsa with Ken in Cuba after an exciting day of bird watching.



# Anthropogenic rewilding: an oxymoron?

Phil Colebourn and Ben Kite, Ecological Planning & Research Ltd, examine how anthropogenic habitats can play a supporting role in rewilding.

This article was first published in *In Practice*, volume 91 (2017), pages 16-20, by the Chartered Institute of Ecology and Environmental Management and is reproduced here by the kind permission of CIEEM.

Colebourn, P. and Kite, B. (2017). Anthropogenic Rewilding: An Oxymoron? *In Practice - Bulletin of the Chartered Institute of Ecology and Environmental Management*, 95: 16-20.

Using a study of hazel dormice as an example, we outline how, and in what circumstances, ecologically rich, managed habitats can be identified and then utilised to accelerate efforts to rewild the British landscape. We also consider how historical ecology can inform this approach to rewilding, so that the biodiversity we still have is protected and utilised to best advantage.

Engendered by a stream of statistics about habitat loss and species decline, there has been vigorous debate in recent years about how to 're-wild' the British countryside to create benefits for biodiversity and ecosystem services.

Rewilding proponents such as George Monbiot point out that Britain has lost its mega-fauna and most of its meso-fauna including bison, boar, bear, wolf, and lynx. This version of the rewilding vision is a landscape at least partly free of human interference where these predators and

**The landscape has been shaped by innumerable decisions over thousands of years**

their prey may once again live wild in Britain.

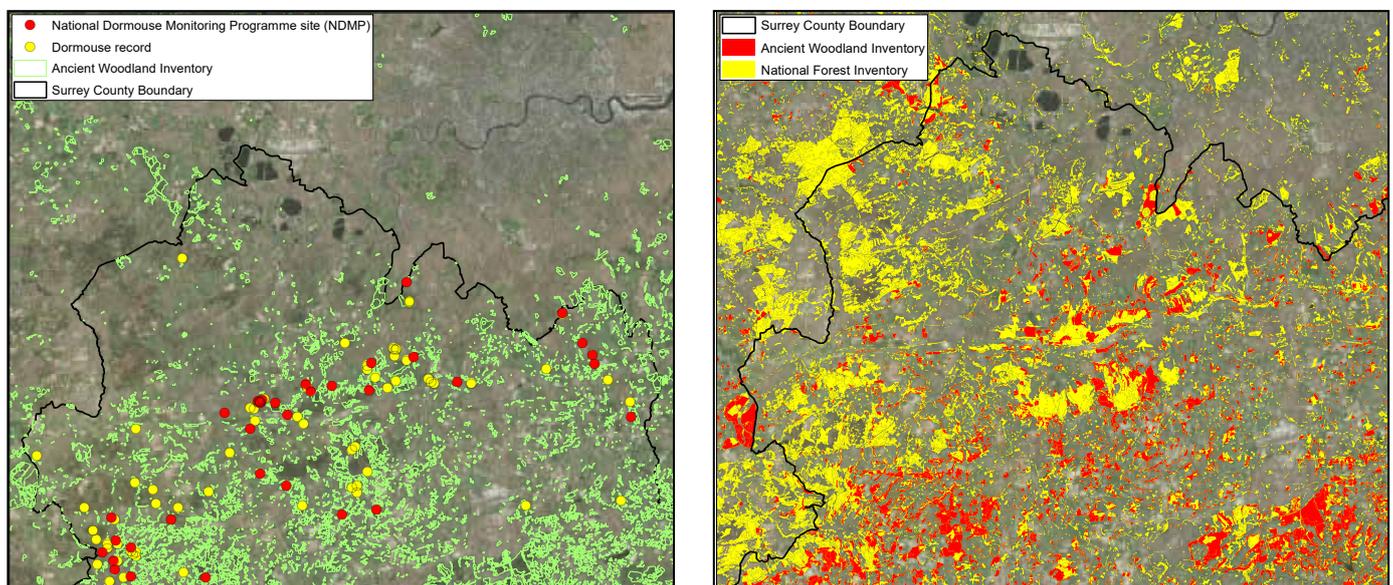
Aligned to this, there has been criticism of the way in which some nature reserves and Sites of Special Scientific Interest (SSSIs) are managed using tools such as controlled grazing to preserve particular assemblages of species that would otherwise no longer be viable. These sites are labelled 'cultural reserves' by Monbiot in which nature is kept in 'arrested development'. The September 2016 POSTNOTE by the Parliamentary Office of Science and Technology explains that

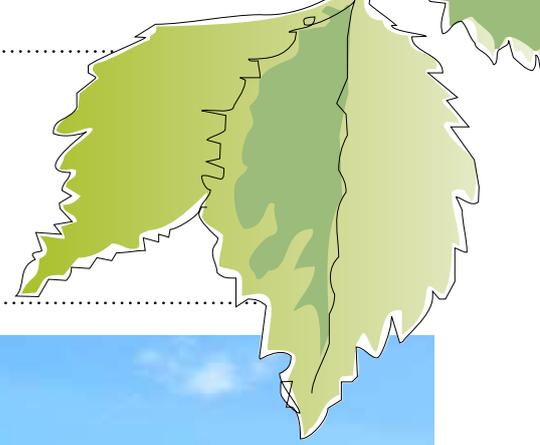
rewilding '...generally refers to reinstating natural processes that would have occurred in the absence of human activity'. This begs the question whether those 'natural processes' require the absence of human activity, and challenges whether 'managed' habitats have value as part of the rewilding agenda.

The British landscape has been shaped by innumerable decisions made by farmers and landowners over thousands of years. Reversing biodiversity loss, or creating new habitats from scratch, will involve many more decisions by many more people; where should we as professional ecologists aim to exert influence?

Present-day landscapes have been fragmented by agricultural clearance and intensification, and by development. Major changes took place in medieval times, but the Inclosure Acts of the 17th to 19th centuries destroyed much common and other unenclosed land, erasing its ancient features and habitats in the process. More

Figure 1. Dormouse distribution and ancient/recent woodland in northern Surrey. Data provided courtesy of People's Trust for Endangered Species. OS Data © Crown Copyright 2017. All rights reserved. Licence number 100005596.





Ben Kite



recently, the World War II War Agricultural Committees were responsible for the loss of many flower-rich meadows. Oliver Rackham's *History of the Countryside* consequently identifies a fundamental difference between 'ancient countryside' and 'planned countryside'. Different landscapes need different approaches to rewilding.

Ancient countryside harbours relics of formerly extensive biodiversity, reflecting what George Peterken called 'original' or 'past' naturalness – complexity that developed in times when sources of seed and spores were widespread and agrochemicals were unknown. In the lowlands, this also reflects complex human responses to topography, geology and soils, exemplified by organic patterns of lanes, pastures, woods, meadows and droveways, often on poorer soils and commons. A high number of SSSIs are commons, ranging from the New Forest to coastal grazing marshes and hill pastures. In planned countryside, by contrast, typified by the former Danelaw where open field farming has held sway since medieval times, woods and droves are few, most land has been arable for centuries, and there are far fewer fragments of high biodiversity.

Besides the land itself, it is useful to have information on what is theoretically possible, and in this respect historical topographical maps, and information on geology and soils, are helpful guides. Biodiversity is often highest where agricultural productivity is lowest, and soil type and structure is an important determinant of what can be achieved – ploughsoils may mean that we need to recreate biodiversity from scratch as the

process of repeatedly turning soil eradicates its accumulated seed bank. Tithe maps and records of Enclosure Awards for a parish give a useful indication of which areas have remained pasture or droveway for longest.

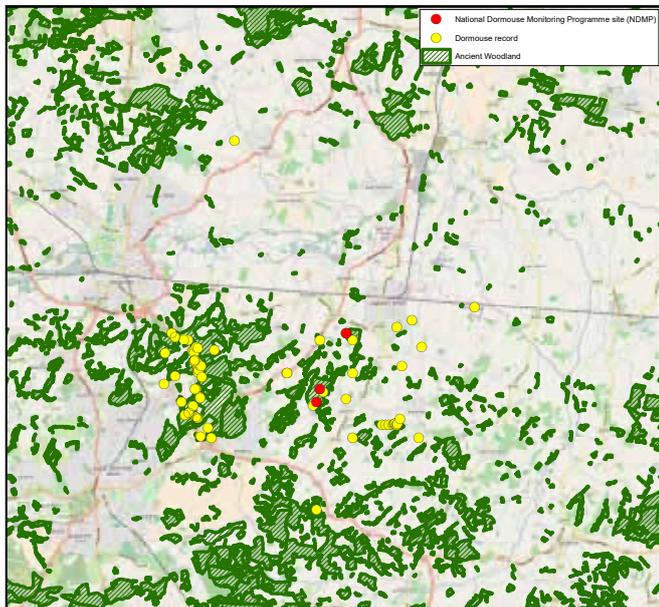
Historical Ordnance Survey (OS) maps are also helpful – the 1870 6" series was the most accurate rural mapping ever undertaken, and one can still find individual trees growing today that are shown on those maps. The maps can also tell us about commons and detached portions of parishes, but they mainly show the countryside after the Victorian re-organisation into Civil Parishes. The 1st Edition OS 1" engravings, and the Surveyors' drawings at 2" or 3" – the latter in the British Library – are more informative about places pre-Enclosure. Proprietary maps made for county landowners, or estate maps, sometimes provide landscape information from even earlier.

Field evidence is critical in verifying what maps tell us, whether from the distribution of 'indicator' species, or from records of rarities and their former distribution. Antiquity of habitats can be a proxy measure of biodiversity, as new species typically arrive and establish over a long period of time. However, harmful management or negative stochastic events, such as the application of artificial fertiliser, will interfere with this trend. Vegetation surveys are essential but clues to the existence of relict biodiversity-rich places can come from particular species, such as the hazel dormouse.

The distribution and abundance of dormice is correlated with 'old' arboreal habitats such as ancient woodland, particularly those with a history of coppice

management. This may be partly because the dormouse lacks a caecum (an organ helping mammals to digest green matter), so it relies on a succession of different flowers, soft and hard mast fruit, and insects to get through the year, meaning that it survives better in biodiverse habitats. Consequently, dormice are generally more abundant in 'ancient countryside' than in 'planned countryside'. By looking at dormouse distribution over wide areas, we can examine the link to biodiverse habitats, which might prove to be valuable source populations of species for rewilding projects. The lefthand pane of Figure 1 shows dormouse distribution in northern Surrey, overlaid onto Natural England's Provisional Ancient Woodland Inventory (lime green). Red dots indicate National Dormouse Monitoring Programme (NDMP) sites and yellow dots are National Dormouse Database (NDD) records. Dormouse distribution appears well related to ancient woodland, with the northernmost part of the County sparsely populated. The right-hand pane on Figure 1 shows Ancient Woodland in red and more recent woodland from the National Forest Inventory in yellow. The northern area is clearly well wooded today but lacks dormouse records. This confirms that dormouse distribution is well related to ancient woodland, but less so to more recent (less diverse) woodland.

The 1820s 2" to 1 mile Ordnance Surveyor's Drawing shows the northern part of Surrey mainly as heathland, with very sparse woodland cover. Much woodland in this area today is conifer plantation or pioneer species such as silver birch, Scots pine and oak developed over former heathland. It is not known whether dormice



**Figure 2.** The Kentish Weald around Paddock Wood. Left-hand pane shows modern OS Mastermap with Provisional Ancient Woodland Inventory (green) and dormouse records (red and yellow dots). Right-hand pane shows 1st Edition 1 inch to the mile OS Map (1819). Data provided courtesy of PTES. OS Data © Crown Copyright 2017. All rights reserved. Licence number 100005596.

have not yet had time to colonise these more recent woods or whether the woodlands are not yet sufficiently diverse to provide the resources they need. The Weald of Kent offers another example of how dormouse distribution reflects woodland antiquity. This once vast woodland known to the Saxons as 'Andreada's Wald' now comprises two landscapes with distinct histories: the 'High Weald' retains much of its old woodland cover but the 'Low Weald' was largely deforested from around the 12th century because it could be converted to fertile farmland.

In 1819, the town of Paddock Wood was indeed a wood (see Figure 2). The east-west line of the railway roughly demarcates the division between the High Weald (south) and Low Weald (north) on the modern map – topographically clear on the 1819 OS map. Most dormouse records are in the High Weald, where there is greater woodland cover and where much more woodland is presumed to be ancient.

The suggestion that dormice fare better in ancient woodland has been challenged by instances of the animal subsisting well in habitats that, ostensibly, appear neither old nor biodiverse. However, where such places are not obviously embedded within 'ancient countryside', (as with much of Dorset), research using historical maps and in the field sometimes reveals a hidden history

that helps to explain how dormice got there.

For example, surprisingly, a population of dormice live around Segensworth Industrial Estate in Hampshire, surrounded by residential and commercial development and roads, between the M27 and the coast. Contrary to suggestions that dormice prefer large, well-connected networks of species-rich habitats, here they also live in scrub, roadside hedgerows and even laurel *Laurus nobilis* in gardens. However, old maps provide clues to how the animals came to be living in sub-optimal habitat. Possibly the earliest reasonably accurate map of the area is Milne's Map of Hampshire (1791), shown in Figure 3 alongside a modern OS map. Other maps show the intervening timeperiod, including Greenwood (1826) and the 1" and 6" OS maps from the early to mid-1800s.

The dormouse population centres on Lambert's Coppice, a small ancient woodland with an intriguing history. In Milne's day, the area was far less populated and built up. West of Lambert's Coppice was Titchfield Common, the rump of a vast unenclosed area of heathland, grassland, scrub and trees, grazed by commoners and similar to the New Forest today. It stretched from the River Hamble to the River Meon, around which lay patches of unenclosed woodland, including Lambert's Coppice. Beyond this, Milne's map shows enclosed land in a lighter shade, but unfortunately does not show boundaries of enclosed fields.

Nevertheless, we can infer from more recent maps that this enclosed area was criss-crossed with hedgerows that were later reduced and simplified. Later maps from the 1800s show the encroachment of enclosure, the disappearance and ultimate

development of Titchfield Common, and the formalisation of woods like Lambert's Coppice into enclosed land with rectilinear boundaries.

This historical evidence reveals how a relict population of dormice, established when the landscape offered a much more favourable habitat, found itself isolated in a small fragment of biodiverse ancient coppice, and which today is spilling out into surrounding areas. Lambert's Coppice today is a beautiful and diverse little woodland, rich in flora.

The dormice at Lambert's Coppice have avoided paying their 'extinction debt', unlike others isolated in small woodlands, apparently by an accident of chance. After World War II, electricity pylons were routed through the wood, since when contractors have periodically cleared the wayleave. The trees here are notably productive in terms of mast fruit, probably because they receive more light. In effect, wayleave clearance appears to be imitating the ancient practice of coppicing, which is reported to favour dormice.

Coppicing is also beneficial for other species such as woodland butterflies. It lets in light and allows ground flora to flourish, including the guild of coppice plants that remain dormant in the seed bank waiting for the opportunity to germinate after clearance. The biodiversity merits of coppicing are so well documented that Natural England (2008) state that 'The cessation of traditional woodland management practices such as coppicing is the most important factor affecting the condition of our woodlands and the biodiversity they support'.



There are other examples of the positive effects of management on biodiversity. Cricklade North Meadow National Nature Reserve (NNR) (Figure 4) and Special Area of Conservation (SAC) has been preserved in an ecologically rich condition through sustained hay meadow management and seasonal grazing by a 'Court Leet' since Saxon times. Because of this management, the NNR is reported to support some 240 species of vascular plants (approaching one third of the British flora).

The management of these ecologically rich habitats often imitates natural processes that no longer operate. We know, for example, that open grassland habitats existed in the interglacial periods prior to human clearance (Colebourn and Gibbons 1990). In the absence of large fauna to create and sustain such places naturally, management must mimic these processes to preserve these specific assemblages of species artificially.

It is clear that restoring a species-rich landscape will require more than simply reintroducing species and allowing nature to take its course. The preservation of some species, like dormice (and by extension the rich ecosystems that they act as 'indicators' for), may need ongoing, regular habitat management. Different landscapes require different approaches to rewilding.

In 'planned' countryside, biodiversity is already impoverished but this offers the opportunity for more radical approaches to restoration. This has been done to great effect on the Knepp Estate in West Sussex (see [www.knepp.co.uk](http://www.knepp.co.uk)) where biodiversity has dramatically increased over the last 10 years. Land has been taken out of intensive agricultural production and turned over to

extensive grazing by cattle, pigs, ponies and deer, simulating the effects of large herbivores that would have grazed the landscape in the distant past. With minimal intervention, these herbivores have recreated a variety of habitats including scrub, wood pasture and grassland, each supporting different species assemblages.

In 'ancient' countryside, however, we should focus on reconnecting the many small, rich habitat patches isolated by farming or development, linking them into functional networks where species can disperse more easily. The 'Nature Improvement Areas' advocated by the National Planning Policy Framework (Department for Communities and Local Government 2012) could provide a policy basis within Local Plans, if authorities could be persuaded to adopt the approach. Areas like the Cotswolds, where unimproved habitat already stretches almost seamlessly across limestone valleys and ridges, might be good places to start.

Many such areas are already 'designated', and whilst their management is not always well informed or executed, it has played a vital role in sustaining assemblages of species that otherwise might not have been able to persist so far into the Anthropocene. Monbiot (2014) suggests that such places preserve nature like 'jars of pickles', but they could more correctly be seen as 'the pantry cupboards', providing the ingredients for a rewilding renaissance in the ancient countryside. The many small relicts of biodiversity could become reservoirs for restoration, contributing their own hitherto 'preserved' complement of species to linked networks of rewilded areas. Where else would we find

the many species that are envisaged as drivers of the trophic cascades that rewilding hopes to unleash?

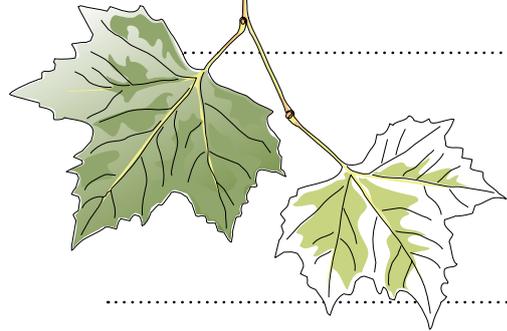
Understanding what is *appropriate* management, identifying the places that have been and are subject to it, and distinguishing these from places where management has been harmful to biodiversity is therefore key to maximising the prospects of a successful national rewilding programme.

Ultimately, our proposition is that the extent to which a landscape might be described as 'wild' is clearly a question of degree. Making a landscape 'more wild' (through rewilding) need not require the abandonment or absence of human management where it has demonstrably exerted a positive effect on biodiversity and can pump-prime rewilding projects with a range of species no longer common in the wider countryside. Anthropogenic rewilding can be real and need not be an oxymoron.

What seems clear to us, given the complexity of the issues and the current uncertain policy backdrop, is that ecologists must step forward and lead the way in helping to decide which of the above models (or mix of models) best fits the landscape in which rewilding opportunities arise. We must be willing to help build the collaborative coalitions of farmers, landowners, conservationists, politicians, regulators and the general public, that are needed both to initiate and then sustain the significant effort required to make rewilding fulfil its tantalising potential.



**Figure 3.** Segensworth past and present: Top pane shows modern OS map with Lambert's Coppice circled. Bottom pane shows Milne's Map (1791) with Lambert's Coppice circled. Map courtesy of Old Hampshire Mapped, University of Portsmouth. OS Data © Crown Copyright 2017. All rights reserved. Licence number 100005596.



# The development of footprint tracking tubes to detect hazel dormice

Annette Middleton-Burke is in the final year of a BSc Ecology and Conservation Management degree, at University Centre Sparsholt, Hampshire, exploring how footprint tracking tunnels can help determine dormouse presence quickly and cheaply.

I am in the final year of a BSc Ecology and Conservation Management degree, at University Centre Sparsholt, Hampshire. For my dissertation research, I wanted to explore the development of a method by which conservation groups could survey to determine the presence of dormice quickly, and at minimal cost. Having taken part in the National Hedgehog Survey in 2015, it seemed feasible to try using a similar footprint tracking method for hazel dormice.

Dormice are important indicators of healthy and well managed woodlands. They are considered rare (in the UK), elusive, and may be somewhat under recorded. Dormice have particular habitat requirements and so a woodland which provides optimal nesting, feeding and breeding opportunities for a dormouse is also likely to support a host of other wildlife.

**Above right:** Mark I tube at RSPB Garston Woods  
**Below:** A selection of Ink cards with various footprints

Natural dormice nests are difficult to find, but dormice will use artificial nesting boxes especially provided for them, and this enables the NDMP to monitor their numbers. The problem with this is that a monthly survey is time consuming and, if dormice are known to be present, needs a Natural England licence holder present.

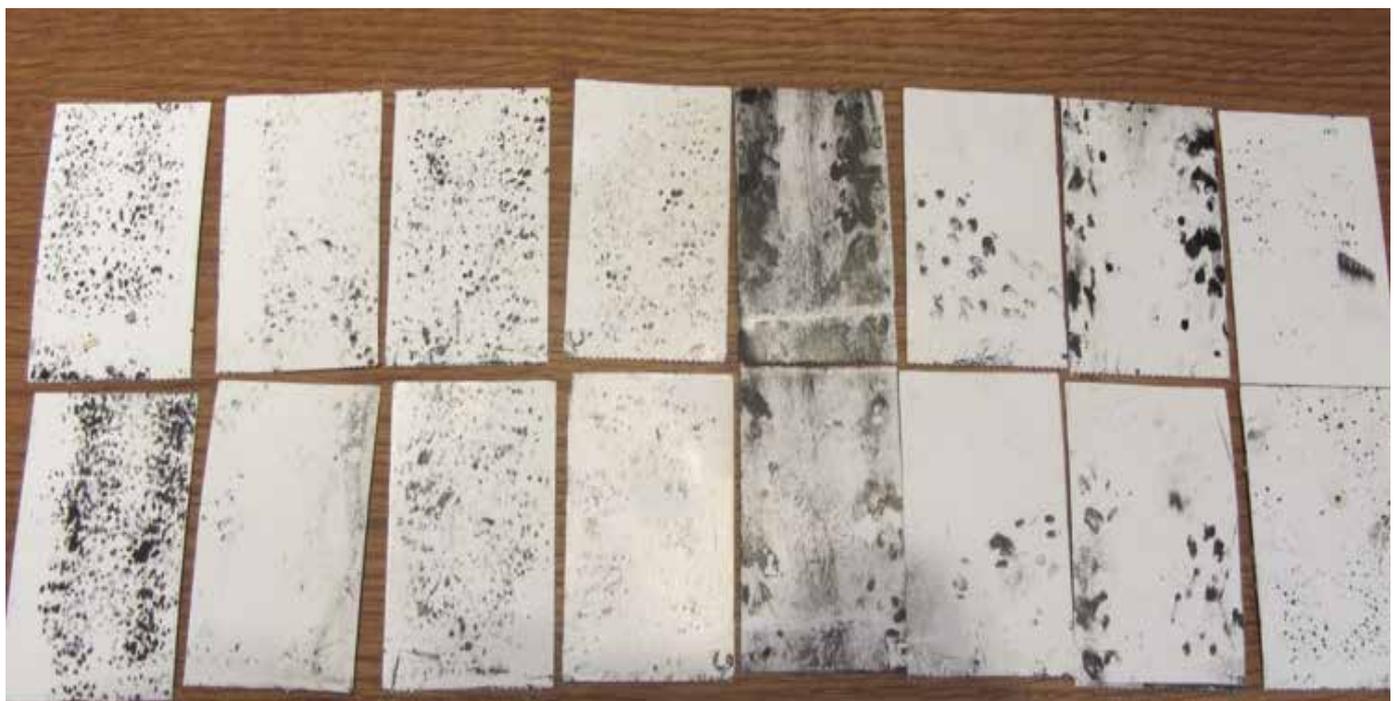
I presented my dissertation proposal to a number of sponsors and received positive sponsorship from several organisations, including The Mammal Society, Dorset Mammal Group, Meridian Foods, and Perdix Wildlife Solutions. I was given permission to conduct my research at RSPB Garston Wood; West Woodyates Farm, and Wiltshire Wildlife Trust Oyster's Coppice. Dormouse records at two of the sites were kindly provided by Susan Sharafi from PTES.

The first tubes were constructed from two nesting tube outers joined as a longer tube, containing a sliding tray with a jam jar lid positioned centrally to hold the bait of Meridian hazelnut butter. A Perdix ink card



was placed on either side of the lid. The whole thing was tied to a suitable branch with cable ties.

The tubes were positioned in the second week of June – with 15 on each of the three sites. Tubes were baited with the hazelnut butter, and checked on alternate days for two weeks to allow the mammals to find them. The bait was detected between two and five days across the three sites. During the last week of June, the ink cards were





**Above:** Mark II Tube at RSPB Garston Wood

added to the tubes, and these were then checked daily. Prints were recorded on all sites from day one but, more importantly, dormouse footprints were recorded at all three sites, taking between one and four days to appear. Any consumed bait was replaced, and ink cards with prints were changed for new ones. Many tubes were damaged beyond repair, as the hazelnut butter proved irresistible to squirrels and badgers as well as the small mammals.

The remaining tubes were collected in again on 3 July. Due to the damage and losses the next stage was to redesign the tube to make it more robust. Despite the losses, the tubes were extremely effective in attracting small mammals to the bait, and thereby leaving their footprints. Prints were recorded on 61 occasions at Oyster's



Coppice, 38 occasions at West Woodyates, and 49 occasions at Garston Wood, an occasion being a 24 hour period. As there are two tracking cards per tube (one either side of the bait), this totalled over 200 sets of prints which required identification. Mills, Godley and Hodgson (2016) found it was possible to identify dormouse footprints even when there were others present, due to the distinctiveness of the footprint. With the help of Dr Sky Alibhai from Wildtrack Ltd, and their Footprint Identification Technique [FIT] software, it was possible to confirm that footprints identified by eye were dormouse footprints.

The Mark II tube was developed with the sole purpose of defeating the squirrels. It was constructed from square downpipe, with a section of 2" x 1" wood held in place with one side screw, on which the bait lid and ink cards were attached.

Survey two took place at the end of August and, because of the logistics of surveying three sites, and further potential damage by squirrels, it was restricted to Garston and Woodyates, with eight tubes at each. The tubes were detected by small mammals between one and four days, on 41 occasions at Garston, and 30 at Woodyates. Most importantly, the tubes were not damaged or destroyed, other than minor dislodgement of the cards on day one, which was resolved by an additional elastic band! Positive dormouse prints were detected within three days at both sites.

After the August survey I compiled and analysed the data and wrote up the study

for my dissertation. The results indicate that the study was a success in that dormice were detected using the footprint tracking method. It was relatively quick, especially when compared with the usual survey method using nest tubes or boxes, which may also return a false negative. RSPB Garston Wood was regarded as the control site, as dormice are regularly recorded there within the NDMP, and so it was not surprising to obtain positive prints from there. Wiltshire Wildlife Trust's Oyster's Coppice is also monitored within the NDMP, but dormice had not been recorded there since 2013. I help with the monitoring there, and was very pleased to record dormouse footprints quickly. As luck would have it, we then found two lovely dormice in one of our boxes in the autumn. I have a Natural England licence to handle the dormice, which is just as well with two lively ones to weigh!

If just one tracking ink card produces an identifiable dormouse footprint, then the method has the potential to be a quick and relatively inexpensive tool for determining the presence of dormice. The next stage would be to explore the method in more detail – as is often the case in research, one question leads to another.

I am extremely grateful for the support and encouragement I have received from all my sponsors, and for the support and advice from my tutors at University Centre Sparsholt.



# Hazel dormice in Kent

Ian White, Dormouse Officer at PTES, takes a closer look at how hazel dormice have been faring in Kent since monitoring began over twenty years ago.

When the National Dormouse Monitoring programme (NDMP) started in 1990, there was only one site in Kent contributing data to the programme. That one site, Spong Wood, epitomises both the success of contributing data to a long-term dataset and the sad demise of woodland management appropriate for dormice and difficulty of implementing it.

In 1990 there were only 13 sites nationally contributing data to the NDMP – of which one was in Kent. Nationally the number of sites slowly increased, such that by 1999 there were 79 sites contributing data and by 2000

there were 126 sites; of these 13 (16.5%) and 23 (20.6%) respectively were in Kent. Along with national sites, the number of sites in Kent continued to increase reaching a peak of 71 sites in 2012. Between 2000 and 2010 the contribution of the Kent sites to the national dataset was about 19%. However since 2011 the number started to fall and by 2016 there were just 48 (16%) sites in Kent contributing data out of 405 sites nationally. It's interesting to speculate on the apparent decline of monitored sites in the county. It's unlikely to be lack of interest - Kent dormouse monitoring was greatly

bolstered by the enthusiasm of the late Ken West and he created a continuing legacy of dormouse interest that is pursued vigorously by the Kent Mammal Group (KMG) and other people passionate about dormice in the county.

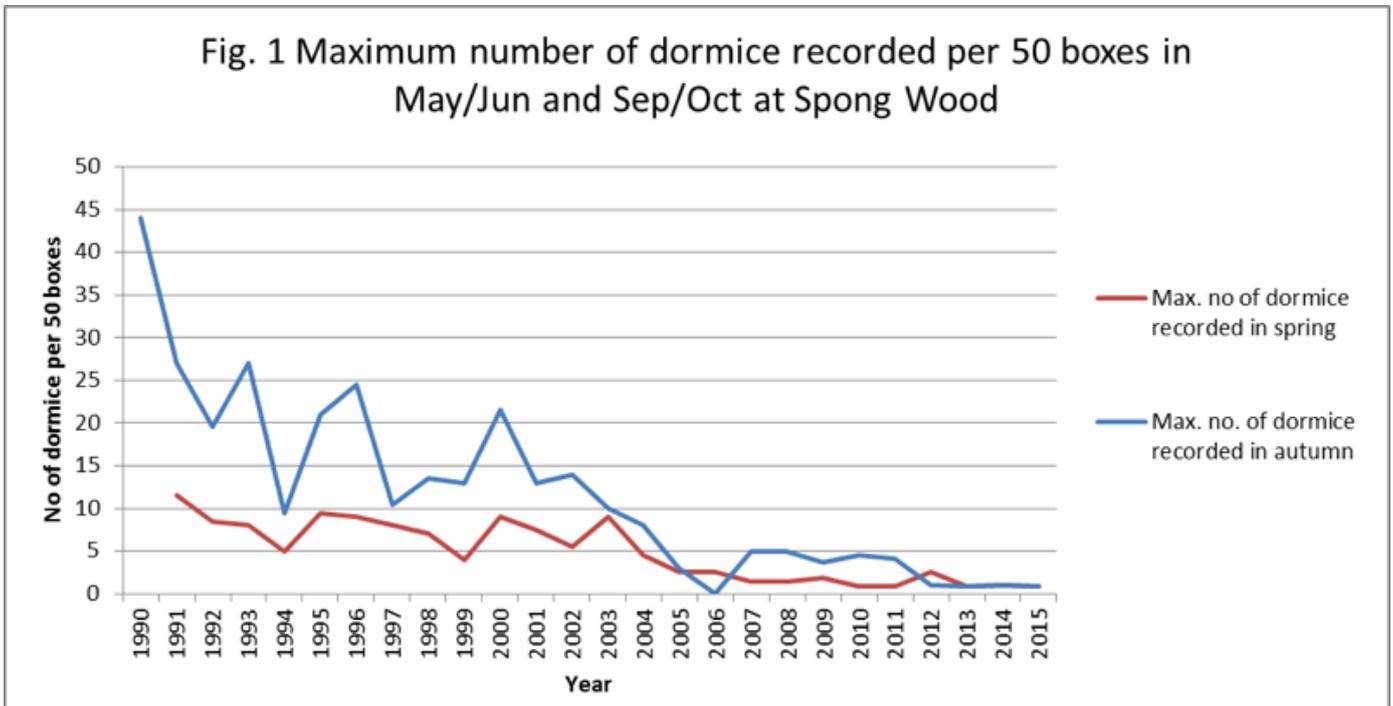
Another reason that that NDMP sites sometimes cease to be monitored, identified by Stephen Carroll in Devon, is down to the difficulty of obtaining dormouse boxes. But this is unlikely to have been a problem that has afflicted Kent, since the KMG has produced excellent dormouse boxes for a number of years. Could the decline in the

Kerstin Hinze





**Fig. 1 Maximum number of dormice recorded per 50 boxes in May/June and Sep/Oct at Spong Wood**

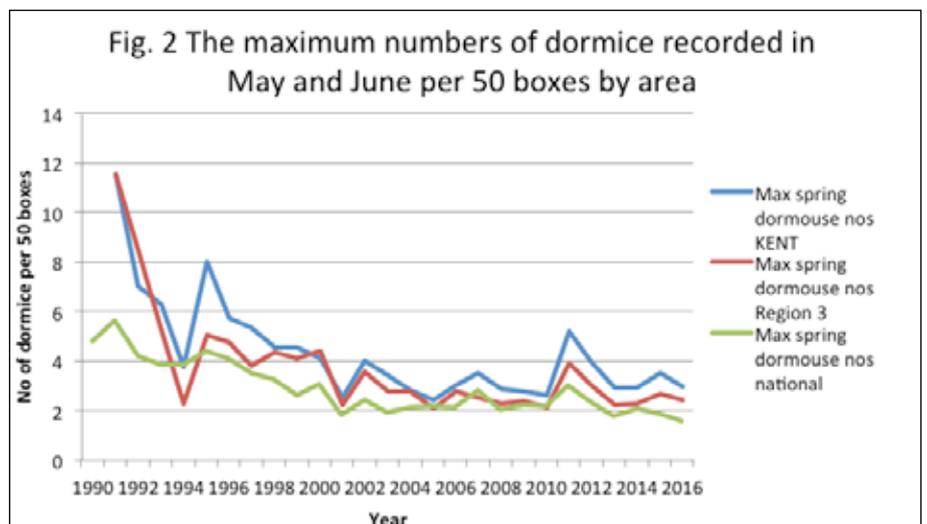


number of sites being monitored be due to local dormouse extinctions due to a lack, or of inappropriate, woodland management for dormice?

This could certainly be a factor affecting Spong Wood. The NDMP site number for Spong Wood is 29 as it was an early site in the programme and it has been monitored continually since 1990 by Shirley Thompson (Fig. 1.). In 1991, 23 dormice were recorded in 100 boxes and in the same year 54 were recorded in October. Pat Morris commented at the time that the wood was so dense that you could hardly see through it. Recently the number of dormice recorded has fallen substantially, with only a single animal recorded in 60 boxes in both the spring and autumn months and only one dormouse recorded in all of 2016. It appears that the dense understorey has now gone and has been replaced by a more open woodland structure that may be suitable for dog walkers but doesn't provide suitable habitat for dormice or other species that benefit from this early shrubby type of vegetation structure. Could it be that the habitat changes at Spong Wood reflect changes in other woods in the county, which are putting increased pressure on the long-term survival of local dormouse populations?

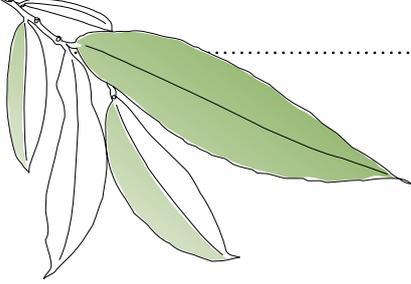
The NDMP was set up to monitor the national dormouse population over

**Fig. 2 The maximum numbers of dormice recorded in May and June per 50 boxes by area**



time and the recent *State of Britain's Dormice* report in 2016 highlighted that nationally the population has declined by 38% since the year 2000. As most counties have insufficient sites to investigate a county trend, the NDMP data is split into regions and Kent is combined with data from Sussex, Surrey and London in Region 3, South East England. Although the number of sites being monitored in Kent may be declining, the number of dormice being recorded at the remaining sites is not, relative to either the Region or the national data. The trend of the maximum number of dormice being recorded during May or June in Kent

closely reflects the trend of the South East Region and, to a lesser extent, the national trend (Fig. 2). As Kent has contributed so much data to the national programme this isn't a surprise and it would appear that even with the advent of potential climate change, Kent remains an excellent county for dormice. As is the case across the UK, this depends on there being sufficient suitable woodland and scrubby habitat remaining for them to access and occupy.



# Gathering of nutters: Devon & Cornwall 10th annual dormouse meeting

Stephen Carroll explains how the enthusiasm for hazel dormice in the south west has continued to grow over the years.

The cakes were glorious: dormouse-shaped shortbreads, mouth-watering brownies, carrot cake, fruit loaf, flapjacks, as irresistible as if we were preparing for hibernation. While pleasantly digesting these, there was meeting and catching up with colleagues over tea and coffee. And on a more professional note, a chance to find out about the latest local dormouse projects and news.

There's definitely something about dormice. This was not a rodent-themed bake off, but our tenth annual county dormouse workers' meeting, attended by over 80 people. After a decade of such events there has been no sign of interest letting up. Nest box scheme monitors, researchers, nature reserve officers, landowners, consultants and volunteers came together to hear and talk about dormice, in a way that one can't imagine would happen for other protected species or taxon groups, say, narrow-headed ants, or sphagnum.

The meetings started in 2007 as way of realising our county Biodiversity and Species Action Plan targets for hazel dormice,

chaired by Devon Wildlife Trust as nominated SAP champion agency, and with invaluable input from volunteers ever since. The dormice are evidently still here, though the BAPs themselves haven't survived, effectively superseded by the NERC Act S41 priority lists. The meetings have continued nevertheless, towards the original aim of providing an informal means for networking, sharing updates, findings, observations, best practice and project ideas, for experienced dormousers as well as those interested in becoming more involved.

Devon is a big county and there isn't a single location convenient for all. Hence past meetings have moved around, taking in a number of places and topics. Between Exeter (2007), Paignton Zoo (2008), Bideford (2009), Newton Abbot (2010-11), Okehampton (2012), Teign Valley (2013), Sidmouth (2014), and South Brent (2015), attendees have learned about hedges and hedge management, mini-coppicing, footprint tracking tubes, DNA studies, insects in diet, trail camera bait stations, hibernation nests, dormice in

gardens, state of county records, nut hunts, planning cases, and taken part in 'bring a box' nest box design discussion, alongside local project and NDMP site news and round ups. A glance through back issues shows several of these have featured in past *Dormouse Monitors*. The 2012 meeting at Okehampton school was especially memorable: dormice have formed a topic around which the school has developed curriculum activities from science to story writing, citizenship to schools grounds. Pupils Leanne, Harry, Poppy, Guy, Bella, and Finlay joined us to describe all the things they have done.

Over recent years we've welcomed colleagues from Cornwall, and occasionally neighbours from Somerset and Dorset in the far east. In 2017, Cornwall and Devon groups teamed together to hold this year's meeting in the Tamar Valley Area of Outstanding Natural Beauty, a landscape of steep wooded valleys tracing the winding course of the river Tamar, symbolically marking the border and shared between the two counties.



This was an apposite time as well as place: the AONB is planning an area-wide community engagement project, with dormice an emblematic flagship species of intrinsic appeal, ideal for connecting up projects and concepts around hedges, woods, and stimulating wider interest and involvement. The Tamar Valley may be able to draw on other recent experiences within the region: we heard updates from three of the largest current landscape scale community projects in Devon which have arrived at great success via similar dormouse-orientated routes. At Fingle Wood, the Woodland Trust and National Trust are restoring a 213 hectare belt of ancient woodland across the middle of the county. In the Blackdown Hills AONB, another trans-county AONB straddling the Somerset-Devon boundary, the Natural Futures project aims to raise awareness, knowledge and working skills for communities within the AONB. The Avon Valley Project in the South Hams promotes sustainable land and water course management across the catchment, from source to sea. In each case these high level objectives have translated into practical, on-the-ground action through distinctly dormouse-focused activities: community surveys, habitat management and advice, eight new nest box monitoring sites, educational and training schemes, and themed public events. It was at one of the new sites in the Blackdown Hills that the melanistic black dormouse was found last year.

Next were updates on two University of Exeter research projects. Cecily Goodwin has



joined us at past meetings since 2013 and reported on the latest progress with her PhD investigating impacts of forestry on dormice, now nearing completion. More recently she has also been analysing the wealth of information accumulated within the NDMP dataset. Robbie Phillips described initial findings of his BSc thesis on competitive interactions between birds and dormice over nest boxes. Interestingly, while there was no difference in the early part of the season, dormouse boxes seemed more readily taken up where old bird nest material was present later in the year, especially where trees with boxes were better connected to the rest of the understorey and canopy.

Previous county meetings have benefited from the University of Exeter's increasing profile for mammal research. Between 2008–2010 and 2013 Cheryl Mills told us about her trialling of tracking tubes, camera-monitored bait stations and regional dormouse genetics for her PhD. Another significant study is Leonardo Gubert's PhD on hibernation nests and behaviour, already making fascinating discoveries. Hopefully the country meetings are of mutual benefit: while we hear about the latest research, there is a fast track opportunity to identify field sites, make contacts, and discuss ideas.

Our main speaker this year was Ian White from PTES, who gave an overview of results, past, present and future projects, and a chance for nest box monitors to deliberate on the practicalities of running NDMP sites. Tom Maddock then gave a talk on the problems of disturbance where boxes are located on publicly accessible nature reserves, and the serious question of how this might adversely affect dormice. Finishing the day were updates on nest box sites and projects in Cornwall and Devon, and notices of upcoming events, such as

this September's International Conference in September.

From 10 years' experience of meetings, a key value and lesson has been networking, and allowing sufficient break times for this. Participants over the years have included Council countryside services, wildlife charities (Devon Wildlife Trust, Woodland Trust, RSPB, National Trust, Field Studies Council, Devon Mammal Group, FWAG), Dartmoor and Exmoor National Parks, AONBs, landowners, visitor attractions, educational organisations, ecological consultants, and institutions such as the University of Exeter and Paignton Zoo (Whitley Wildlife Trust), a lead partner in the national dormouse captive breeders group. Practitioners are able to share expertise with those just starting out; owners of new or lapsed sites and trainees can be put in contact with dormouse licensees seeking regular monitoring sites or support at existing sites; gaps in county coverage can be highlighted and targeted. And we meet friends and eat cake.

For our 2013 meeting we were honoured to be joined by Dr Pat Morris, who reviewed the progress of dormouse conservation from the first modern studies, nest box and reintroduction schemes, to looking ahead to future plans. 2017's event was attended by another star guest, Pompom the rescue dormouse, on her way to a new home at Paignton Zoo. In the comfort of a sofa-like nest of hay, she found the meeting interesting enough to snooze quietly and obliviously through the whole thing.

---

# Keeping hazel dormice in captivity

Detlef Seibert shares his experiences and insights about keeping hazel dormice in captivity, what they feed on and how to keep them active.

This paper is a slightly revised translation of the German version printed in *Eliomys Mitteilungen der Bundesarbeitsgruppe (BAG) Kleinsäuger e. V.* Heft 3 / 2016 Seite 9 [Communications of the federal workgroup for small mammals vol. 3 / 2016 page 9]

Hazel dormouse are often acknowledged to be the most beautiful rodents by many animal lovers; a well-deserved description considering their long, fair, soft fur and furry tail. Their large black eyes, round fur

covered ears and tiny mouths are very appealing and cute. Their pale pink paws are reminiscent of human hands and their friendly, astonished appearance completes the picture.

---

## There was little tradition of keeping dormice in captivity in Germany

---

Contrary to rats and house mice, very few people have had bad experiences with hazel dormice as

pests. In Germany most people don't know much about dormice and haven't even heard the German names Bilch or Schläfer meaning glis or dormice. The names of the four species of dormice, which were once common in Germany, are also obscure to them. These are Siebenschläfer, (the fat or edible dormouse), baumschläfer or forest dormouse, gartenschläfer, (garden dormouse) and also haselmaus, (the hazel or common dormouse).

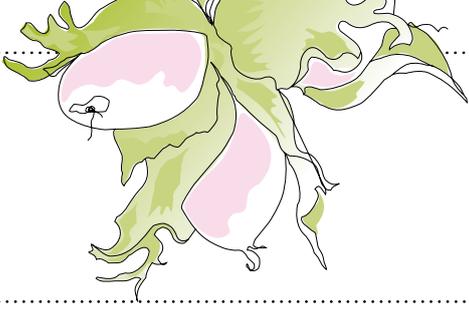
Very few people have ever seen a live dormouse in the wild or even a stuffed one in biology class at school because nowadays showing stuffed animals isn't encouraged. Few zoological gardens or similar institutions have hazel dormice or other species of dormice in their stock. The reason why is that their activity patterns – the fact that they're nocturnal - make them less attractive to visitors. Consequently the urban population in particular knows very little about these animals. However, this may well change. The first advance in our knowledge came when Sven Büchner and his colleagues started the great nut hunts in several federal states of Germany. The next push came when the "Deutsche Wildtierstiftung" rightfully named, in my opinion, the hazel dormouse as animal of the year 2017.

Interestingly the technical term winterschlaf (torpor) has as its root, the word schläfer, which is often associated not with dormice but with bats, hedgehogs and hamsters. Commonly the name siebenschläfer – literal translation 'seven sleepers' - is associated with a weather rule for springtime only. Forecasting seven weeks of heavy rain - not very positive!

Contrary to historical practices in the UK, there was little tradition of keeping dormice in captivity in Germany. Consequently only a few



Detlef Seibert



children's books feature them as the main characters. However, this is beginning to change. We also have no national dormouse monitoring programme, no dormouse officers, no dormouse groups or other well organised volunteer associations and sadly no *Dormouse Monitor!* Our activities relating to the protection of dormice, especially hazel dormice, are few and far between, and organised by just a few people. The suggestion of creating a national dormouse society was met with a lukewarm response. Breeding and release programmes don't, to my best knowledge, exist in Germany.

The population of hazel dormice in Germany is small and scattered with numbers in decline. But it seems that there are also surprises in terms of where dormice are found and doing well. And there are mitigation programmes in cases of strip mining, road or rail construction and building industrial or housing estates.

All four species of dormice are red listed in Germany. Meaning that disturbing animals or removing them from the wild is not permitted. Therefore only dormice bred in captivity, with a certificate to prove it,

may be held in captivity, for breeding purposes. That limits the number of people willing to breed these animals severely. The holder/breeder is obliged to inform the relevant authorities of every new acquisition or birth and every loss by selling or death of an animal. In my case it is the department of parks and gardens of the town council of Bochum. Every time I contacted these people I spoke to a

### The population of hazel dormice in Germany is small

different person and each one had absolutely no idea what kind of animal I was talking about. I was always asked to fill in a form which I think was filed and then forgotten about.

There is a considerable difference of opinion about whether hazel dormice should be kept in captivity or not.

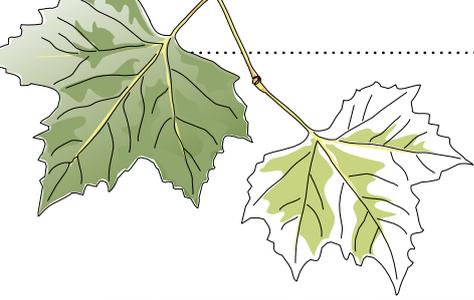
Scientists, nature conservationists and other interested people meet regularly at international dormouse conferences. In the main these people are not in favour of keeping hazel dormice in captivity, or of breeding

hazel dormice or any other species of dormice. It is assumed that by increasing domestic demand, animals will be taken from the wild and sold with forged papers. It is feared that small populations will decrease further and possibly die out. To my best knowledge, to date, there is no indication that natural populations of hazel dormice have been threatened by the removal of animals from nature. The threat caused by habitat destruction is far greater.

A different position is taken by the members of the BAG. They are mainly representatives of zoological gardens and breeding groups of small mammals, and they think that captive breeding and the possible release into the wild can help the conservation of endangered species. Legally captive breeding hazel dormice in zoological gardens can also satisfy some of the demands of scientists, film makers and animal lovers, preventing the need to take animals from the wild for other uses. As an added benefit, detailed husbandry knowledge of how to keep and rear of the species in captivity, is gathered. Special breeding techniques may be developed which may be beneficial if a large number of animals



Kerstin Hanze



need to be bred for a controlled release into the wild. A further possibility could be the opportunity to rear threatened individual strains or subspecies, in order to secure their survival. That has been and is being done for other species.

The arguments of both groups about responsible domestic captivity and breeding should be carefully balanced against each other.

Despite that, it should be kept in mind that all species of dormice are wild animals and not domesticated pets. The animals are often very shy and do not like human contact. Though, sometimes they may be lured with food.

Hazel dormice usually have to be kept individually. They may be, under careful surveillance, brought together as breeding pairs. But these pairs rarely live together for longer periods without fighting. (private communication of Goedele Verbeylen and Kerstin Hinze). They are normally active between dusk and dawn and enter, if kept outside,

long periods of torpor or hibernation. Their activities are limited to running, climbing, feeding and grooming with longer periods of sitting still and observing their surroundings. Hazel dormice are fragile animals and should not be handled unnecessarily and certainly not be petted. Because of this most people won't be satisfied keeping them in captivity. In my opinion hazel dormice should not be kept by children or people looking for a pet, but only by those who are genuinely interested in the species and their conservation.

There are three factors that make keeping hazel dormice in captivity relatively easy. Firstly, although the animals constantly urinate and defecate, both are, luckily, nearly odorless and the faeces are small and usually dry up within a short time. Secondly, in the summertime, the animals may, for up to one month, feed solely on seeds and nuts without need for further care as long as they also have fresh water. Thirdly, unlike other dormouse species, they do not bite.

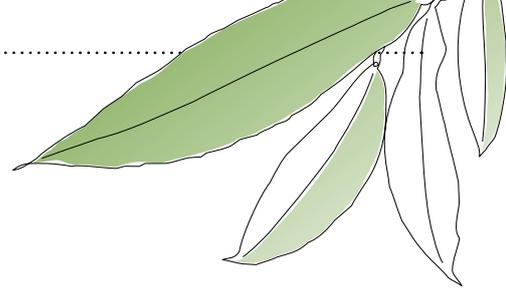
My experience with hazel dormice is limited to two males I received from a licensed breeder in Saxony. The juveniles were roughly three months old. The first animal lived for approximately 39 months, from 19.05.2010 to 21.08.2013. The second animal was born on 15.05.2014 and is alive and well at the time of writing, approximately for 34 months. The first animal hibernated each winter for nearly three months. The second one spent only a few days, up to two weeks in torpor or hibernation at different parts of the year.

Because of the limited space available to me I decided, with a heavy heart, not to breed the animals. So I only keep one animal at a time. I keep the animal in a room of my condominium in a commercially produced cage originally built for birds. The cage is situated in a room on the third floor with windows and a door facing south. It is ventilated by the door for about one hour a day, depending on the weather outside. During the daytime the cage gets direct sunlight between 9am and 4pm. The room is rarely used so the animals are not exposed to sounds and odours that are unfamiliar to them. It is only heated during winter when the temperature drops to freezing outside.

The cage is roughly 1.2 X 0.8 X 1.4m, made of iron mesh. The wire is just 2mm thick, with a 13mm aperture, painted a light grey color. The bottom of the cage is covered with dry grass and contains boxes with small plants. The dormice climb the wire mesh as easily as climbing through the canopy, grasping the wire as they would small twigs. They don't gnaw the wire or any other part of the cage. Inside the cage I place twigs, both with and without leaves, branches of untreated wood and larger pieces of bark for climbing. At the edges I've placed piece of slate, sheets of wood and stainless steel beakers to be used as feeding and resting places. Two wooden boxes with removable roofs and four cardboard tubes are used by the animals for sleeping. Leaves and tissue paper are used as nesting material. Both are shredded to pieces by the animals and fill the nest boxes roughly half full. The animals rarely bring dry grass from the floor into the boxes. The horizontally mounted cardboard tubes are their preferred sleeping places during the summer.



Detlev Seibert



The relative humidity is measured and kept between 60 and 80%. If it is too low, water mist is sprayed into the cage, preferably when the animal is sleeping in a nest box. The floor of the room that the cage is kept on, is wooden, and so easy to clean which is important because the animals scatter faeces and urine a good half a meter from the cage. Consequently I keep the cage some distance from the walls, otherwise, especially after eating blueberries, the walls would be covered in Picasso-like splatters.

In the late afternoon I put food in the cage whilst the dormouse is still sleeping. I separate the dry food from the wet and put them in different places, if possible, every night. Fresh, wet food consists, depending on availability, of blueberries, blackberries, strawberries, sweet cherries, green and black grapes, pieces of apple, oranges or pears and, if available, honeysuckle flowers, which are extremely popular. The dry food consists of sunflower seeds, sesame seeds and, in autumn, hazelnuts and partially opened walnuts. On rare occasions I use hamsters or gerbils pet food. Juveniles are partial to dried insects. Drinking water is always available out of two bottles.

If a specific food is available to them, the animals will feed first on the sweetest and 'easiest'. In other words, because it takes a great effort to open

hazelnut shells, dormice only eat them when no other food is available. In autumn the dormice have to be encouraged to eat nuts by removing all other food. After a few days the animals must get very hungry and the nuts are eaten and the animals start putting on weight. In my experience the dormice are not able to open walnut shells. But they will eat the kernels out of partially opened shells.

Since dormice constantly produce urine and faeces, I clean their feeding dishes every day. The whole cage is thoroughly cleaned usually every two weeks but at least once a month. All internal parts of the cage, except the sleeping box, are removed and cleaned ensuring the dried faeces and urine are removed using running water, a scraper and brush. I spend roughly one hour cleaning the entire cage and its contents. The sleeping boxes are cleaned very rarely.

As well as watching the animals climbing, feeding and grooming I was extremely fascinated that both dormice ran upside down on the underside of the ceiling grid of the cage for long periods of time. Generally the animals use only the top 30cm of the cage. I rarely observed them in the lower part and never on the ground. They never ever took food from the floor of the cage.

After about half a year the first animal lost some of its shyness and took

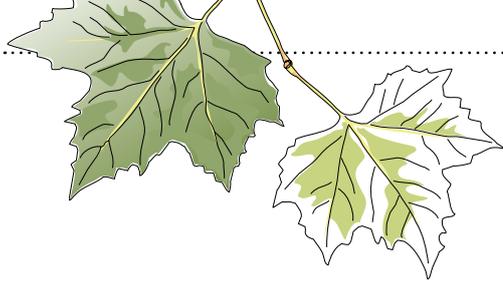
food from my hand. It fled immediately at any sound I made or if somebody else came into the room.

One highlight I experienced was the frequent escapes of the second juvenile, a very small, animal. These escapes were later captured with the help of an infrared camera. The story goes as follows. The animal squeezed itself through a gap between the support frames and the roof grid. It remained on the roof, returned to the cage to feed, then came out again. After some time it made up its mind, climbed down the outside of the cage, jumped to the ground and went out of view of the camera. By following the droppings I was able to determine where the dormouse had been. The animal always returned to the room with the cage by the morning. Sometimes it went back to the cage to feed and sleep. Sometimes it climbed up to the top of the curtains and slept up there. The use of gnawed parts of the curtains as nesting material did not amuse my wife very much!

I am very grateful to Mr. Detlef Hansch for breeding all species of dormice found in Germany and for his valuable knowledge about rearing and keeping dormice in captivity which he shared with me.

Detlev Seibert  
DetlevSeibert@web.de





## Other mammal records in dormouse nest boxes

Just as natural cavities and old woodpecker holes are used by a variety of creatures, so our wooden nest boxes are exploited by many species seeking to make a home. Emily Thomas, PTES' Key Species Monitoring Officer, has produced these maps of other mammals that have been recorded in our nest boxes.



**Above:** Brown rat records from NDMP



**Above:** Long-eared bat records from NDMP



**Above:** Pygmy shrew records from NDMP



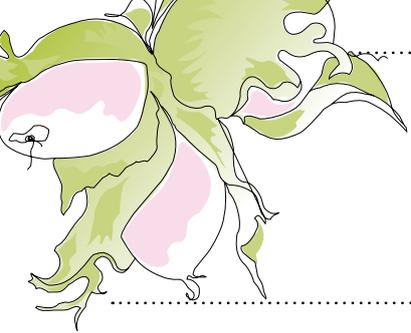
**Above:** Wood mouse records from NDMP



**Above:** Weasel records from NDMP



**Above:** Yellow-necked mouse records from NDMP



# Unusual findings in a dormouse nest box...

Nick Downs and James Sweetman made an unusual discovery when they carried out their monthly dormouse nest box checks.

The dormouse monitors of Midger Wood, in Gloucestershire, are used to the unexpected, just as monitors across the UK are. In addition to finding the odd dormouse nest in Schwegler 1FF bat boxes, a wide variety of other creatures have been found in dormouse boxes. These include wood mice, yellow-necked mice, pygmy shrews, blue and great tits, and hornets. However, finding a crayfish (or more specifically, a signal crayfish claw) during our annual winter box clean, was the most unusual find to date! The claw was found in a box, approximately 25m from a small stream (known to contain signal crayfish), and showed nibble marks that were similar to those found on a wood mouse or yellow-necked mouse gnawed hazelnut.

We know that wood mice and yellow-necked mice have a wide and varied diet, but are not aware of any records of them having eaten crayfish before. We suspect that the crayfish had been caught by another predator, and the discarded claw found by a mouse. Interestingly, there is a line of boxes closer to the stream (approx. 5m away), which would have been bypassed on the way to where it was found. We are now wondering what we may find next!



**Above and far right:** the signal crayfish claw, with gnaw marks, found in a dormouse nest box.  
**Above top right:** the dormouse nest box the claw was found in.  
**Right:** the stream in Midger Wood, known to contain signal crayfish.