WINTER 2003

The Dormouse Monitor

Newsletter of the National Dormouse Monitoring Programme

Derbyshire Dormouse Reintroduction

Little did they know it, but the 28th June 2003 was to be a big day for 34 dormice born as part of a captive breeding and reintroduction programme co-ordinated by Royal Holloway, University of London, English Nature and PTES. The dormice were bred by members of the Dormouse Captive Breeders Group, with veterinary support from the Institute of Zoology.

Preparations had been going on for many months at a secret woodland location near Matlock for the twelfth reintroduction of dormice under the Species Recovery Programme. The site was to become the first place in Derbyshire with a resident dormouse population since the species disappeared from the county several decades ago. The site was chosen for its size, connections to other woodlands, plentiful coppiced hazel and the willingness of the owner to carry out dormouse-friendly management. A soft-release was carried out with the help of the Derbyshire Mammal Group.

Two of the females gave the volunteers a difficult job by persisting in making their nests in the feeding tubes, and not in the nest boxes provided in the pre-release cages! It seems that they were pregnant on arrival and were likely to be responsible for starting a new generation of dormice in a county that hasn't seen them for years. The good news is that the first two box checks carried out this autumn, by the Derbyshire Mammal Group, have yielded a good number of dormice.

ENGLISH NATURE
Royal Holloway University of London
PEOPLE'S TRUST FOR ENDANGERED SPECIES
ZSL LIVING CONSERVATION
TRACKING Mammals PARTNERSHIP

Welcome to The Dormouse Monitor

We hope your dormouse year went well. With all the exceptional weather we have had this year we are really looking forward to receiving all your records and looking at the overall picture. We will report back on the 2003 results in our next issue in the spring.

We have some very interesting articles in this issue; news of the pilot yellow-necked and wood mouse survey that many of you helped with earlier in the year, and results of a dormouse survey in the south west, with some very surprising results! Look out, too, for a report on the new Tracking Mammals Partnership that was launched in July and for news of this year's dormouse reintroduction in Derbyshire.

Please let Susan Sharafi have an up-to-date e-mail address for at least one person in your dormouse monitoring group. We obviously need to keep our records as accurate as possible so that we can contact you with any queries about your records and other matters when necessary. Susan's e-mail address is susan@ptes.org.

We are hoping to hold a monitors' weekend in the autumn next year to give everyone the opportunity to meet and hear about all the latest research work. Those of you who attended the one in Cheddar some time ago know how useful and enjoyable it was. We are planning the second weekend now and can put your e-mail addresses to good use if we finalise the arrangements before the next edition of *The Dormouse Monitor* is due! We look forward to meeting you then.

Best wishes
Valerie Keeble, PTES

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The scientific work is based at Royal Holloway, University of London, Egham, Surrey TW20 0EX and the organisation is carried out by PTES.
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Pictures kindly provided by Dr Pat Morris, Dr Paul Bright, Fiona Sanderson, Nida Al Fulaij and PTES.
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How Can We Monitor Yellow-necked Mice?

A big thank you to everyone who turned out in February earlier in the year to check their dormouse boxes for yellow-necked mice. The good news is that we think this may prove to be an excellent way of monitoring this and other species in future.

We were keen to find out whether doing checks in late winter would be better than checks during the 'dormouse season.' Ideally we need counts of animals just before breeding begins in the spring e.g. in February or March. These would give us a measure of abundance most likely to be representative of any trends in abundance. However, counts at this time of the year obviously involve additional effort - something we are generally all keen to avoid!

We have now been back and looked at data on yellow-necked mice in nestboxes during the summer that some of you collected several years ago and compared this (as far as possible) with the counts done last February. It looks as if nestbox occupancy falls off a lot during the depths of winter and early spring – probably because underground burrows provide warmer places for yellow-necked mice to nest at this time of the year.

We were not sure this would be the case, because yellow-necked mice, and wood mice, are usually found huddling several in a nestbox, greatly increasing the temperature therein and thus making it much more habitable. Hence the need to find out how many can be found in nestboxes in late winter. The answer seems to be that many fewer are to be found then, and not only because fewer animals are alive. We conclude that it is unlikely to be worthwhile checking nestboxes during the depths of winter. Checks during the dormouse active season (April-October, the latter especially) are likely to tell us at least as much about yellow-necked abundance, perhaps more.

So, next year, we would like to trial combining surveying yellow-necked mice and wood mice, too, with our regular dormouse checks. This should mean less work for all hard-working monitors and make much more efficient use of your time.

We have re-designed the dormouse recording forms for next year to include a section for yellow-necked mice and wood mice. For the latter two species we don't need to know sex or weight, just the numbers

News from Monitors

Bedfordshire Group Report 2002

In 2002 the group checked 815 nestboxes at 26 sites throughout the county. Dormice were found at five of these sites, which was an increase on the previous year when dormice were only found at two sites. Numbers of animals found were also up from 2001, which corresponds with findings on a national scale. Although the increases in Bedfordshire are small, it is good to see numbers going in an upward direction. Dedmansey Wood, historically the best dormouse site in the county, continued to give good results, showing that if the habitat is right dormice will do well. The group is proposing to record the habitat type at all its sites to see if we can understand better the habitat of sites where dormice occur and that of sites where they don't.

David Anderson, Bedfordshire Group Chairman

Box Invaders, Cumbria

I was interested to read Dora Clarke's report from Gloucestershire regarding birds in boxes. May's survey at Roudsea Wood also found a 20% occupancy of boxes by birds; blue and great tits mainly but also two pairs of marsh tit, one pair of nuthatch for only the second year running, and for the first time ever, wren. In addition to wood mice we also found pygmy shrews, solitary wasps and pipistrelle and brown long-eared bats. One box last year had as many as 18 brown long-eared bats, this at a height of just 1.2m! It just goes to show how desperately short of natural nesting holes many woodlands are.

Mark Rawlins, Cumbria


Bank vole

More Box Invaders, Isle of Wight

On our box check in June this year we were pleased to encounter a bank vole in one of the nestboxes. This friendly little vole was a welcome change from the usual hyperactive wood mice that sometimes leap from the boxes in a beeline for your throat or add a certain aroma to your plastic checking bag! We spent a happy few minutes getting to know the vole then left it in peace in its high-rise home. We carried on with our check and a few boxes on, much to our surprise found another bank vole. This one was a female who had recently given birth and had six contented pink pups happily tucking in to a spot of lunch!

Susan Sharafi, Isle of Wight

found in each box (unless you have time to record these data – you never know, they might turn out to be valuable in the future).

Most monitors are used to evicting wood mice from their dormouse boxes so, next time you encounter some, please count them before you do! And please do make a note and send us your records for all three species.

Dr Paul Bright
Royal Holloway, University of London

Did you know that.....

Yellow-necked mice & wood mice are extremely fond of acorns - which are poisonous to some larger mammals - to the extent that wood mice caches have been known to block field drains in East Anglia!


Yellow-necked mouse

Do Long Hot Summers Bring Baby Dormice?

It can hardly have escaped anyone's attention that we've had a record-breaking summer. A new UK temperature record was finally set at Gravesend in Kent, after days of sizzling weather, when the mercury hit 38.1ºC on the 10th of August. England and Wales enjoyed their warmest June since the long hot summer of 1976. In the midst of all this meteorological record-breaking, it seemed timely to take a look at how summer heat affects dormice.

In early summer, May to June, it's common to find dormice torpid, particularly if it's cold or if there isn't a lot of food around. This is known as facultative torpor, because it allows them to reduce their energy demand and survive food shortages. However, if they spend a lot of time in early summer asleep this may delay their breeding that year, leading to fewer juveniles fat enough to survive hibernation. We can't measure exactly how much time dormice spend in torpor in the early summer as this would either require very expensive equipment (mini thermometers), or it would mean disturbing them more often to check whether they were torpid, which can cause them to desert their nestboxes. However, it is possible to look at the relationship between torpor and temperature, and the relationship between breeding and temperature, and to try and detect any patterns. This relationship may differ in different woods being monitored.

As some of you may remember from earlier editions of *The Dormouse Monitor*, broadleaved dormouse woods can be classified in one of two ways – as those that provide a large food peak in the autumn (known as "hazel" type sites) and those that provide an early summer food peak and an autumn one (known here as "oak" type sites). We would expect breeding success to be more affected by summer weather at oak sites, as dormice breed during food peaks and may breed earlier in the summer at oak sites. I've spent the past few months trying to unravel the effects of summer temperature on dormice breeding.

I looked at the effects of June and July temperature on the number of viable juveniles (animals heavy enough to survive hibernation) produced per female at 32 sites monitored for 10 years – from 1993 to 2002. There was no effect at hazel sites, but at oak sites, hotter midsummers meant more juvenile dormice. The proportion of animals torpid in June is, as you might expect, also related to temperature (see figure 2). We can't be sure, however, if torpor delays breeding, or if there are other effects such as hot summers encouraging plant growth and insect abundance, which provides more food for young dormice and their mothers. Studying dormouse populations can be very complex.

We do know, however, that dormice are likely to be very sensitive to climate change. As summer temperatures aren't getting any colder, it doesn't look as if weather changes at this time of year are responsible for the observed declines in some dormouse populations (see figure 1). Rather, warm summers could increase breeding success and might even buffer some populations – but not others -

This is a typical "oak" wood under our classification, with less of an understorey than the hazel wood, but with lots of canopy trees. Some of these trees support large midsummer insect populations and some provide summer flowers, both of which are a good source of dormouse food and can enable them to breed earlier.

A typical "hazel" wood under the classification used here, has extensive hazel growth providing an abundance of autumn food and few canopy trees.

against the adverse effects of warmer winters, which can cause the animals to wake up from hibernation, losing fat reserves and running the risk of starvation. As yet, it's hard to tell. All the hard work dormouse monitors have put in over the years has taught us a great deal, but there are still many things we don't know. So please don't forget to send in your data this year. Data from such an exceptionally sultry summer could tell us a lot more about how dormice populations will behave in the hotter conditions predicted in the coming decades.

Thank you very much to all dormouse monitors for all your hard work!

Fiona Sanderson
Royal Holloway, University of London

Does temperature affect dormice?

Figure 1: This graph shows the national index of dormouse abundance in woods from 1993 to 2002 – incorporating all the latest data that you've sent in. The index is set at one in 1993, and this illustrates why we remain concerned about dormice, as the overall woodland population as measured in 2002 is about 77% of that in 1993. The monitoring results from the unusually hot and dry summer of 2003 should prove very interesting and we look forward to seeing them.

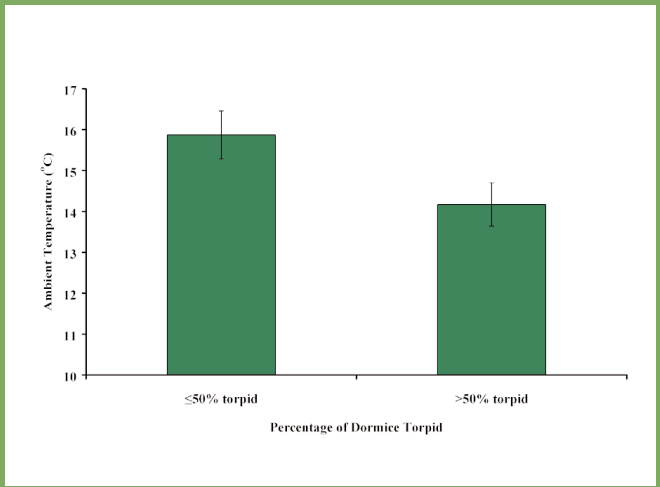


Figure 2: This graph shows the average temperature at which more than 50% and less than 50% of dormice are found in torpor in June. The bars indicate 95% confidence limits. It is clear that torpor is highly temperature-dependent.

South West Dormouse Project

Last year, English Nature, with Hanson Aggregates and Exmoor National Park, funded a project to look at dormice in the south west. It was devised by Dr Paul Chanin and myself and involved local Mammal Society groups in the relevant counties. The purpose of the project was two-fold. First, to find out if the records of dormice in odd places away from their traditional habitats of semi-natural woodland and hedgerows were just aberrations or could be repeated. Secondly we wanted to establish a protocol for the use of dormouse tubes as a survey method and to find out how efficient they are.

These light plastic tubes containing a protruding wooden tray, were devised by Dr Pat Morris and are designed to give dormice places to camp on sites where nesting places are often in short supply, such as gorse, scrub, coniferous woodland and tightly flailed hedgerows.

Almost two thousand of them were put up in a wide range of habitats. Sixteen tubes were deployed at 20 metre intervals at each site and checked for dormice and nests from April to November by volunteers.

We found that the dormice used a range of scrub types. They were also found in hedgerows both managed and unmanaged, and although they were not recorded at most sites where diversity was low, they were present in one hedge where only three species were recorded. Dormice turned up frequently in coniferous woodland , which may seem surprising. And finally, they were found in one Culm (purple moorgrass) grassland site.

The tubes do not always attract campers. We found evidence of dormice at, or adjacent to, eight sites where none were recorded in tubes, three in woodland, three in scrub and two on heathland. Live dormice were also found at two of these sites, one heath and one area of scrub. In one other case in scrub, a dormouse found a surveyor and leapt onto her neck!

Tubes are used throughout the dormouse year of eight months. Peaks occurred in May and September which suggests that tubes are more likely to be used in these months. We found that new nests were still being built in November, even though the tubes had been in place since April.

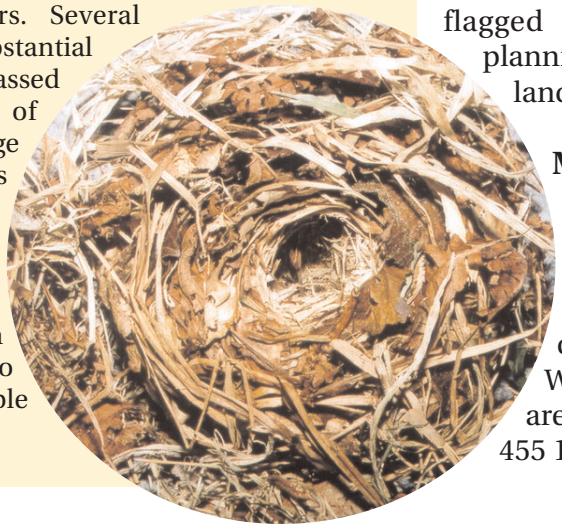
Our findings confirm the growing view that dormice can be found in a wide range of habitats in addition to species-rich woodlands and large hedgerows. Previous records are not simply aberrations as we were able to repeat them in this study. The tubes certainly proved a very useful additional survey method.

This study was not designed to study densities, life history parameters or the body condition of the animals. Nevertheless, our findings need to be flagged up by others working in conservation, planning authorities and everyone involved in land management.

Michael Woods
Chairman, The Mammal Society

Copies of the research report which contains methods and results of the South West Dormouse Survey (report number: 524) are available from English Nature. Call 01733 455 101 for a free copy.

Recent records in Somerset indicate that dormouse nests are being found increasingly frequently in clumps of pendulous sedge (*Carex pendula*) growing in woodland rides and damp corners. Several well-made and substantial nests have been passed to me made out of leaves from the sedge together with pieces of bracken. For anyone carrying out dormouse surveys, pendulous sedge is a much kinder place to search than bramble or gorse!



News of Other Monitoring Programmes

The Tracking Mammals Partnership

The Tracking Mammals Partnership (TMP) is a new initiative, bringing together 23 organisations with a variety of interests in mammals, with the aim of providing good quality information about the distribution and status of all UK resident mammal species.

Several nation-wide monitoring schemes have been long-established, including the National Dormouse Monitoring Programme (NDMP) and the National Bat Monitoring Programme. Other surveys include Mammals on Roads, a winter survey of mammal sightings and signs called Winter Mammal Monitoring and Living with Mammals. We are also hoping to have a more co-ordinated approach to deer monitoring across the UK in the near future.

Several mammal species are still not being monitored, such as the red squirrel and the Bechstein's bat. This is often because they are rare species that are difficult to find in the wild and we do not have, as yet, adequate methods to develop monitoring schemes. Over the next few years we hope to address these problems.

It is, of course, impossible to do any of this work without the continued support of all the volunteers who go out, year after year, to collect the all important data we need, so thank you all for your help. The NDMP was the first to carry out countrywide annual surveillance of a mammal species and, as a result, we have good information on what is happening to dormouse populations. We now need to extend that to all UK mammals if possible, so that we can provide the quality of information, similar to that provided by bird organisations, to inform government decisions on the environment and conservation issues.

Dr Jessa Battersby, JNCC
www.trackingmammals.org

MTUK MAMMAL SURVEYS

Living with Mammals

This year we asked people to record the mammals they see in their local green spaces, such as parks, gardens, cemeteries and allotments, to try to set up a monitoring scheme for urban mammals. The survey ran from the beginning of April until the end of June. 853 people sent in completed forms. We will have preliminary results very soon, so if you would like a copy of the feed-back letter that will be going out to all participants before Christmas, please call us on 020 7498 5262.

Mammals on Roads

We reported earlier that counts of hedgehogs along roads had declined in the eastern half of England between 1991 (when pilot surveys were done) and 2001. Counts for 2002 were similar to those for 2001, suggesting that there really has been a major reduction in the numbers of hedgehogs seen along roads since 1991.

And for the first time, we now have counts of mammals other than hedgehogs. Data was collected in 2001 and 2002 and continued this year, too. These show generally quite consistent average numbers in the different regions in 2001 and 2002. Other work that Dr Bright and Lisa George have carried out at Royal Holloway, University of London, shows that counts really are closely related to mammal abundance in the countryside, not just – for example – to traffic flow.

THE NATIONAL BAT MONITORING PROGRAMME

The National Bat Monitoring Programme's Sunrise Survey has been hugely successful in 2003. Participants are asked to simply stand outside a structure that may be suitable for bats, or to choose a walk of about 1km, and record any bat activity they see, especially 'swarming' behaviour.

All of the UK's 16 bat species eat insects and prey abundance is at its highest just after dusk and just before dawn. Many bats are still out hunting as it begins to get light on summer mornings and can easily be spotted against the sky. Just before coming back for the daytime, members of the same bat colony often spend time flying together in circles around the roost entrance as a 'swarm'. The presence of a swarm indicates a roost and recording the location allows the roost to be monitored in future years. Fortunately, volunteers are able to do this by counting bats emerging at more reasonable times - just after sunset.

This year, 183 people returned data gathered for the sunrise survey. The majority of people did see bats and some interesting roosts were located. In Cleveland, a colony of pipistrelle bats and a colony of long-eared bats were found in different buildings at the same school. Over 300 rare greater horseshoe bats delighted a caving group in Devon with a swarming display at the entrance to an underground site. All bat roosts are protected under UK legislation and locating sites like these helps us to conserve and monitor bat populations.
To take part in the sunrise survey contact BCT on 0845 1300 228 or e-mail nbmp@bats.org.uk.

THE HAZEL DORMOUSE SAP (Species Action Plan)

Elements of the actions will be ongoing indefinitely, but have been completed in the sense that an effective mechanism for action is in place, and the action is up-to-date.

Action	Planned	Ongoing	Completed
Ensure that PPG9 planning guidance is taken into account by Highway Authorities and Local Authorities.		●	●
Identify sites supporting dormice and provide advice on appropriate management to land managers.		●	●
Use grant-aid and incentive schemes (e.g. Woodland Grant Scheme) to encourage sensitive habitat management.		●	●
Manage woodlands and hedgerows to maintain current populations and prevent further habitat fragmentation.		●	
Continue the reintroduction programme (see above). Reinforce populations in at least 3 other counties where they are scattered (e.g. Bedfordshire, Northamptonshire and Berkshire).		●	●
Establish by 1996 a co-ordinated programme of captive breeding to support reintroduction, including research into the long term survival of captive bred individuals.		●	●
Publish a new conservation manual in 1995.			●
Support training in dormouse conservation for land managers and advisers.		●	●
Continue research into dormouse ecology, with particular emphasis on the ecology of dormice in hedgerows or conifer sites, analysis of existing population data, hibernation requirements, and the effects of isolation on populations.		●	●
Promote research on methods of conserving dormice that are consistent with various silviculture systems.	●	●	
Maintain and extend the National Dormouse Monitoring Scheme to 25 counties, with a view to assessing the long-term effects of site management and successional development.		●	●
Repeat at 5-10 year intervals surveys of sites identified in the Great Nut Hunt of 1993, to provide data on changes in distribution and abundance.		●	●
Carry out a survey of dormice in Wales to assess range and habitat use and identify necessary conservation measures.			●
Encourage research on the ecology and conservation of dormice in an international context.		●	●
Pass information gathered during survey and monitoring to JNCC in order that it can be incorporated in a national database and contribute to the maintenance of an up-to-date Red List.			●
Ensure that landowners, agencies and local authorities are aware of dormouse requirements, especially the impact woodland and hedgerow management may have, and the effects of habitat fragmentation.		●	
Ensure continued public awareness of this species as a key indicator of desirable woodland and hedge conditions.		●	●

An update on progress made to date implementing the BAP for the hazel dormouse (State of Britain's Mammals 2003, written for MTUK by Professor Macdonald & Fran Tattersall, WildCRU, University of Oxford.)

CALLING ALL MONITORS: WE NEED YOUR 2003 RECORDS NOW!

Thank you to everyone who has already returned their recording forms for this year. If you haven't done so yet I would be grateful if you could send them to me here at PTES as soon as you can.

Please do fill in all parts of the recording forms e.g. time animals were found, if the babies were pink please say so and particularly, whether or not they had their eyes open. Even if you were not lucky enough to find any animals at your site, please return the summary form with the dates of your visits and the number of boxes checked. If you were not able to check your boxes this year also please let us know.

2004 recording forms will be sent out with the spring issue of *The Dormouse Monitor*. If you know of anyone else who would like to receive the newsletter, please let me know and I will add them to the mailing list.

Susan Sharafi, PTES