

# Restoration and maintenance of dormouse populations within the Upper Thames Region, Oxfordshire



Dormouse numbers in the U.K. are estimated to have halved in the last 100 years, with the majority of remaining populations occurring in ancient semi-natural woodland and hedgerows in southern England. The main reasons for this decline appear to be linked to the loss and fragmentation of ancient woodlands, reduction in woodland management practices and, more recently, climate change.



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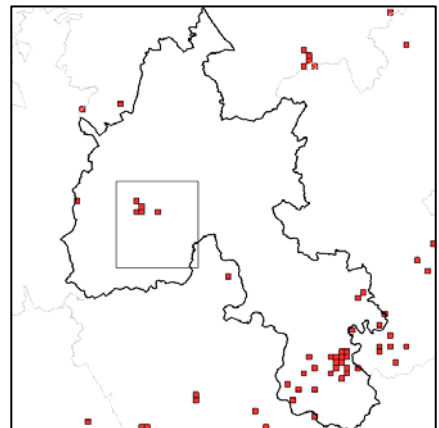
**Dormouse (*Muscardinus avellanarius*)**

The common or hazel dormouse (*Muscardinus avellanarius*) is a small, nocturnal mammal weighing around 20-30g. For a large part of the year (6 months or more), they hibernate in nests on or under the ground. Dormice spend most of their active time, during spring, summer and early autumn, high off the ground in tree canopies, where they feed on insects, berries and nuts. During this period they also breed, producing litters of 3-5 young. The young have to achieve a weight of 15g or more to survive their first hibernation, however many do not survive this critical time.

As an endangered mammal in the UK, the dormouse is listed on the UK Biodiversity Action Plan (UK BAP). It is also a priority species for the Natural England Species Recovery Programme, which has carried out fifteen reintroductions to date. A long-running National Dormouse Monitoring Programme (NDMP) exists with 150 sites monitored by volunteers. Activity is centred around southern counties, such as Kent and Dorset. However, apart from the Chilterns, there are no NDMP sites in Oxfordshire. Ecological research on dormouse populations has been carried out in some English counties, but no studies have yet been conducted into dormouse life history and habits in Oxfordshire. This baseline information is essential in order to facilitate conservation management of dormice, by reducing isolation of populations, and linking up metapopulations through increased habitat connectivity and land management.

In order to conserve this British mammal, research has to be undertaken to determine the true presence of dormouse populations throughout its range in the UK, including Oxfordshire. In addition, information on how dormice use patches of ancient semi-natural woodland and hedgerows in lowland agricultural landscapes, such as the upper Thames, needs to be acquired.

Another area of ecological research not yet undertaken is whether the dormouse competes successfully with the introduced grey squirrel (*Sciurus carolinensis*) for food (especially energy-rich nuts required to fatten up for the winter hibernation) and space. Once we have this



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**Dormouse records for Oxfordshire – Wychwood Forest is within the marked square**



**Grey Squirrel (*Sciurus carolinensis*)**

information, evidence-based management of woodland and surrounding hedgerows can be implemented, aimed at increasing both dormouse population numbers and facilitating dispersal of dormice in Oxfordshire.

### The project

This WildCRU project – under the leadership of our post-doctoral researcher, Dr Amanda Lloyd, and in collaboration with the Forestry Commission – will undertake focused research into the ecology of the dormouse in the upper Thames region, particularly around Wychwood Forest and adjacent woodland patches and hedgerows. The four key objectives of

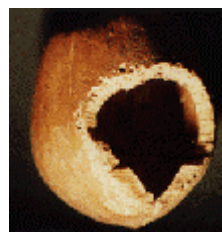
the project are to:

- quantify the effects of habitat fragmentation, due to agriculture, on dormouse populations in the region;
- determine the use of agricultural habitats, particularly hedgerows, by dormice as temporary habitat for dispersal or permanent residential habitat;
- investigate the interaction between dormice and non-native grey squirrels (*Sciurus carolinensis*) through competition for food resources and space; and
- dependant on the results obtained from the above, possibly implement an evidence-based recovery programme to increase dormouse numbers and promote dispersal into surrounding areas.

The project will be coordinated with existing national dormouse conservation efforts – the NDMP and Species Recovery Programme – and is an integral part of the WildCRU's ongoing Upper Thames Project (UTP). The UTP aims to restore biodiversity across the lowland agricultural landscape of the upper Thames region, by conserving and reconnecting major habitats essential to the survival of key species, thereby promoting whole ecosystem functioning and services. This is being achieved by formulating environmentally sensitive management strategies that are underpinned by scientific studies of the ecology and habitat use of specific species. Species include bats, moles, harvest mice, water voles, mustelids (otters, mink, polecats), brown hare, grey partridge and other farmland birds (notably waders), crayfish, dragonflies, damsel flies, and moths.

The results from this dormouse research will lead to the implementation of practical habitat management and, possibly, a species recovery, programme in the region. This will bring about increased dormouse numbers and promote their dispersal into surrounding areas, so ensuring the species' long- term viability in the region and linking populations across southern England.

One way of determining the presence of dormice, is to look for feeding signs, such as characteristically opened hazel-nuts. Dormice are very neat when opening hazel-nuts, creating a smooth edge – see photo, far right. In comparison, other rodents, such as wood mice, create a jagged edge – see photo at right. For the past two winters, hazelnut surveys have been conducted by Amanda and volunteers, in a number of woods around north-west Oxfordshire, to determine dormouse presence.



**Wood mouse  
opened hazel-nut**

© web free source



**Dormouse  
opened hazel-nut**

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## Wider implications

© Wikipedia



Typical Ancient Woodland in  
Lowland southern Britain

Results from this project will feed into habitat management recommendations for fragmented lowland agricultural landscapes. We therefore envisage that a number of knock-on effects will ensue. There will be an increase in tree planting and hedgerow management, through the promotion of Environmental Stewardship Schemes, thus reducing landscape fragmentation to the benefit of numerous other species. Species that may benefit from this reduction in landscape fragmentation include long-eared, pipistrelle and lesser horse-shoe bats; yellow-necked mouse; shrews; passerine birds; woodpeckers; figure of eight and brown hairstreak moths. Many of these species are also listed on the UK BAP.

Research focusing on this endearing, yet endangered mammal, will help promote a healthier landscape, not just in terms of biodiversity, but also for the general community; directly through volunteer involvement, and indirectly through better management of woodlands and hedgerows, leading to woodland regeneration, hence improved environmental health.

## Can you help?

We are seeking both financial (£155,000) and voluntary help with this project over the next three years. We need volunteers, to carry out more hazel-nut surveys, assist in erecting nest boxes and follow-up to check for dormouse use, radio-tracking dormice and grey squirrels, plus habitat surveys.

If you are able to assist in anyway we would be delighted to hear from you.



© WildCRU – Rob Strachan

Mother dormouse and 4 juveniles

## Please contact us at:

The Wildlife Conservation Research Unit (WildCRU)  
Department of Zoology, University of Oxford  
Tubney House, Abingdon Road, Tubney,  
Oxfordshire OX13 5QL

Dr Amanda Lloyd re. volunteering:  
Tel: +44 (0)1865 393100  
Email: amanda.lloyd@zoo.ox.ac.uk

Diana Roberts re. funding:  
Tel: +44 (0)1865 393122/100  
Email: diana.roberts@zoo.ox.ac.uk