



## The National Dormouse Monitoring Programme in Britain

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### Abstract

The National Dormouse Monitoring Programme (NDMP) was established in 1988, this paper considers why it was set up, what it has achieved over its 22 year history, the limitations of the methodology and future development of the programme.

**Keywords:** Dormice, volunteers, nest box, population trend, habitat

### 1. Introduction

There had been very few studies on hazel dormice *Muscardinus avellanarius* in Britain before the 1980s. Although people were familiar with their presence in woodlands, knowledge of the species was limited, with even basic data such as body weight given inaccurately in the Handbook of British Mammals in 1977 (Corbet & Southern 1977). Elaine Hurrell had published two booklets on the species, (Hurrell 1962, Hurrell 1980) and there had been two papers published in Mammal Review. One of these, the Mammal Society Dormouse Survey (Hurrell & McIntosh 1984) suggested that there had been a decline in both the range and population size of the dormouse in Britain. This prompted the Nature Conservancy Council (later English Nature) to fund Pat Morris and Paul Bright of Royal Holloway, University of London to investigate the question of why dormice are rare in Britain. The discovery, by Doug Woods, that dormice would readily use special nest boxes made it possible that this question, and general dormouse ecology, could be investigated. In 1988 boxes were put up at 5 sites in Somerset and Herefordshire and over 35 visits, 384 dormice were found and biometric data recorded. Since then, nest boxes have been positioned at many other sites to achieve regular monitoring of the species across England and Wales, a system now known as the National Dormouse Monitoring Programme (NDMP).

In the early years of the NDMP sites were added in Cumbria and in the east of the England, with 26 sites submitting data in 1992, including the most northerly population in Northumberland. The following year saw the first dormouse reintroduction into a woodland in Cambridgeshire and the second took place two years later in Nottinghamshire (Bright & Morris 2002). In 1999 more sites started submitting data from sites in Kent affected by the construction of the Channel Tunnel rail link to London and by 2002 there were 141 sites in the NDMP with a good distribution across the current dormouse range. In 2009 no records were submitted from Northumberland due to the absence of a licensed monitor, but dormice were still considered to be present in the county. In 2010, 253 sites were monitored, 18,673 boxes were checked and 6,156 dormice were recorded. A total of 40 sites recorded no dormice, three of these being reintroduction sites but others were from within the current core range including Kent, Surrey, Sussex and Devon.

## **2. Material and methods**

The NDMP requires a minimum of 50 boxes to be erected approximately 20 metres apart, at a site where dormice are known to be present. They are checked a minimum of twice a year in either May or June and in September or October to give an indication of the pre-breeding and post-breeding population. The number of dormice found in the boxes is recorded along with basic biometric data such as sex and weight, and the results are submitted annually to the People's Trust for Endangered Species (PTES). The cumulative results provide the data for the national dormouse population trend analysis.

## **3. Results**

The only academic study of the NDMP so far was undertaken by Sanderson (2004) who sought to evaluate the NDMP as a means of monitoring the dormouse population in Britain, assess the factors that influence dormouse abundance and evaluate woodland management for increasing local dormouse populations. It was identified from early results in the NDMP that dormouse abundance had declined in the 1990s and that the monitoring programme was sufficiently powerful to be able to detect, within 10 years, a future population decline equivalent to 50% over 25 years. Dormouse abundance was strongly influenced by both weather and habitat and it was considered that both habitat quality and connectivity were vital to the long-term survival of dormice in Britain.

In 2009 the NDMP was 21 years old and a national dormouse population trend analysis showed that the population decline appeared to be slowing. National media picked up the story stating 'Twenty one years of continuous monitoring, meticulously planned reintroduction programmes and the efforts of hundreds of volunteers seem to have paid off as wildlife charity the People's Trust for Endangered Species reveals that the threatened hazel dormice is beginning to show early signs of recovery'.

## **4. Discussion**

The NDMP was set up to study dormouse ecology and the national population trend but in addition it also provides an opportunity to encourage people to interact with wildlife, become involved in a national mammal monitoring programme and explore their local woodlands. The presence of dormice can also encourage sympathetic woodland and hedgerow management at both a local and landscape level.

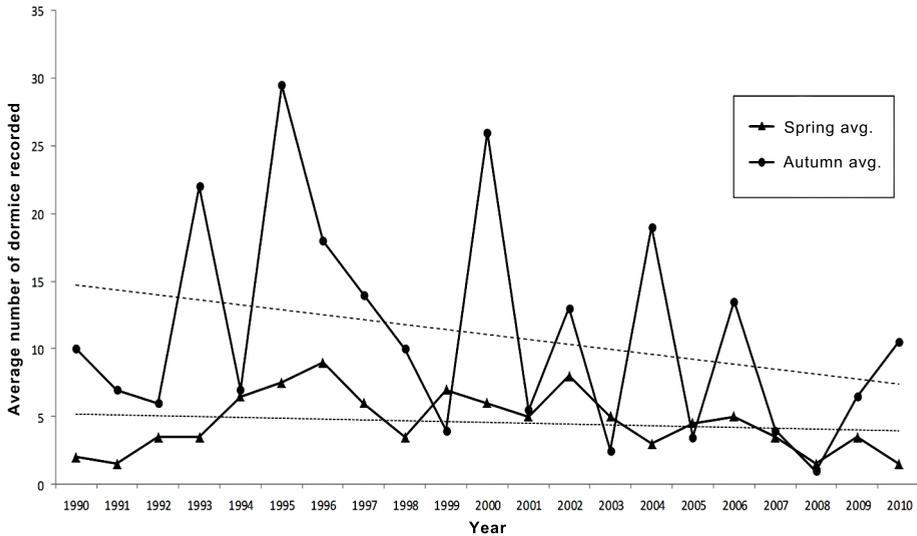
The steady increase in the number of NDMP sites over the past 22 years means that there is a similar increase in the number of people involved in dormouse conservation and associated activities relating to habitat study and management. This increase gives a greater opportunity for improved training for both professional ecological consultants and voluntary monitors. NDMP sites need nest boxes and in 2010 PTES arranged for some to be made at Doncaster Prison, using locally sourced timber. By 2011 over 1,100 boxes made at the prison were being used at 21 locations in England and Wales either to replace old boxes or to set up new sites. At some of these sites non-conservation groups helped put up the boxes and improved their knowledge of dormice and the conservation of the species. As the number of NDMP sites and the people involved in their management and monitoring increases so general awareness of dormice, and the issues they highlight, is raised. As the NDMP relies predominantly on volunteers and with approximately five workers at each site, there are now at least 1,200

people involved in dormouse conservation in Britain. In 2009 to thank the volunteers for their on-going assistance with the programme, PTES sent them all a monogrammed 'Go Nuts for Dormice' duster along with a dormouse cookie cutter. This, and a specially designed dormouse collection box, helped raise £1,200 for further conservation work

The 'Dormouse Initiative' was first published in 1992 as a typewritten document to support early dormouse monitors. The publication, whose title has changed to the 'Dormouse Monitor', is now a full colour publication that is published twice a year and includes research news from Britain and updates from around the world to inform local volunteers and the international dormouse community. In Britain many voluntary local groups have developed such as the Sussex Dormouse Group and the Northwest Dormouse Partnership. These serve to promote dormouse conservation in their area and some seek grant funding for projects that are based on dormice as a key species. It is important to provide national support to both individuals and local groups to ensure there is both communication and shared practice between monitors. Greater communication has been enhanced by establishing an internet forum for discussion among national and international dormouse workers.

The NDMP has proved a powerful tool to measure dormouse population trends and to engage volunteers but it does have some important limitations. An NDMP site is set up where dormice are known to exist, but although it is known that habitat is important for dormouse survival there has been no quantitative measure of habitat quality included in the NDMP. Hence if dormouse abundance changes over time there has been no indication of whether the habitat has altered locally. To address this problem dormouse monitors at each site were asked to complete a simple habitat structure survey at each box. The survey consisted of scoring the shrub layer between one and five from 'sparse' to 'very dense' and the canopy layer between A and D as it increased in 25% area cover. The expectation was that high canopy cover and dense shrub layer would not co-exist; that dormice would be more likely to be recorded in areas of low canopy cover and dense shrub layer; that dormice would be less likely to be present in areas of high canopy cover and some shrub layer and least likely to be present in areas of sparse shrub layer. Unfortunately an initial analysis of the data indicated that dormice are either very general in their use of woodland habitat or that the survey method is too crude to identify differences in habitat in the preferred areas for dormice. Further work will continue to try and identify an improved methodology to measure both habitat quality and habitat change.

Although it is important to nurture monitoring at new sites it is similarly important that existing local sites continue to be supported and appropriate habitat management encouraged if resources are available. Using radio tracking Bright and Morris (1992) identified that dormice had difficulty travelling through derelict coppice due to the increase in numbers of vertical stems and that they benefited from coppicing which promotes the development of the understory and sprawling, interconnected branches. This message may have been lost to a new generation of woodland managers as anecdotal evidence indicates a reluctance to manage derelict coppice where dormice are known to be present. Monitors at Siccaridge Woods, a coppice woodland in south west England, have been recording and submitting data to the NDMP since 1990 and it is known that there has been no woodland management during that time in the area where the dormouse nest boxes were sited. Although the average spring and autumn numbers of dormice have fluctuated at the site the long term trend indicates a population decline (Fig. 1). There is however, ongoing management in other parts of Siccaridge wood and hence it is likely that the dormouse population of the wood is stable.



**Fig. 1** The spring and autumn average number of dormice recorded at Siccridge Wood in Gloucester between 1990 and 2010. The dotted lines indicate the long term trend in numbers recorded.

The NDMP is a survey that relies very heavily on volunteer effort. While this enables a large amount of data to be collected, it also requires a constant training effort to ensure that the information is of reliable quality. The biometric data recorded for the NDMP is 'sex', 'activity', 'weight', 'breeding condition' and 'age'. Where 'sex' or 'weight' is not recorded it implies that either the animals were too young to sex or weigh, they escaped or the monitor lacked confidence to handle or reliably sex the animals. The number of records with either no 'sex' or no 'weight' has been relatively stable since 1988, but unfortunately the number of records where neither 'sex' nor 'weight' has been recorded has been rising steadily. This implies that an increasing number of monitors are lacking confidence to handle dormice and that there is a greater need to improve training for dormouse workers.

In the future it would be useful to develop a habitat management survey that shows how the habitat at individual sites is changing over time so a correlation between numbers of recorded dormice and habitat quality can be investigated. This could encourage habitat management at existing, new or potential sites. It would also be useful to encourage new sites in specific geographic areas to show local dormouse population trends. Statistically at least 40 sites are required to identify regional dormouse population trends from the NDMP and currently only two counties in Britain have that number. In addition, if new habitat surveys are required and new volunteers are needed to monitor new sites, on-going training is required to ensure that the collected data is more robust.

The NDMP celebrated its 21<sup>st</sup> anniversary in 2009 and it is hoped that it will be able to celebrate its 50<sup>th</sup> anniversary in 2038. There is no 'quick fix' for the dormouse in Britain. The population has been declining for at least the last 100 years and it may take at least that time to begin to reverse the trend. At least we now have a mechanism for monitoring what is happening and, potentially, for guiding our future response.

## 5. Acknowledgements

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## 6. References

- Bright, P. & Morris, P. (1992): Ranging and nesting behaviour of the dormouse *Muscardinus avellanarius* in coppice-with-standards woodland. – *Journal of Zoology* **226**: 589–600.
- Bright, P. & Morris, P. (2002): Putting Dormice back on the map. – *British Wildlife* **14**: 91–100.
- Corbet, G. & Southern, H. (1977): *The Handbook of British Mammals* 2<sup>nd</sup> edition. – Mammal Society, Oxford.
- Hurrell, E. (1962): *Dormice* (Animals in Britain series No. 10). – Sunday Times Publications.
- Hurrell, E. (1980): *Common dormouse*. – Mammal Society, London.
- Hurrell, E. & McIntosh, G. (1984): Mammal Society Dormouse Survey, January 1975–April 1979. – *Mammal Review* **14**: 1–18.
- Sanderson, F. (2004): *The population ecology and monitoring of the dormouse Muscardinus avellanarius*. – PhD submission Royal Holloway, University of London.

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