Native dormice (Muscardinus avellanarius) are largely arboreal, occupying overgrown, species-rich hedgerows or mixed deciduous forest, moving between the shrub layer, understorey and canopy. Although associated with broad-leaved woodland, dormice are also found in conifer plantations and coastal scrub. They’re typically active from April to October, hibernating the rest of the year on the ground.

**Historic and current status**

Dormouse numbers in Britain declined during the 20th century. Writing as early as 1905, one author noted: ‘in Middlesex the dormouse is now scarce: it was formerly common,’ and an article in *Country Life*, in 1945, remarked that dormice were less commonly encountered than in 1930. It’s thought that their range has shrunk by around a half in the last hundred years. In 1885, dormice were present in 49 English counties; today, they’re known in 32 (excluding those counties where they have been reintroduced—Figure 2), almost entirely south of a line between Shropshire and Suffolk, with the exception of remnant and reintroduced populations. The species’ currently known northern limit in Britain is a single population in the limestone woodlands around Morecombe Bay to the south of the Lake District National Park. There has been no recent evidence of the population at Staward Gorge.
further north, suggesting their range may still be contracting. Even in counties where they are widespread, hazel dormice have a very patchy distribution across poorly connected sites.

Hazel dormice are absent from Ireland and Scotland, and widespread in continental Europe, from the Mediterranean to southern Sweden, and eastward to Russia. They’re a priority species of conservation concern, protected under national and European legislation, but classified as ‘Least Concern’ on the IUCN Red List.

Population monitoring

Dormice are small, nocturnal and arboreal, which makes

Figure 1 The population change recorded at NDMP sites between 1993 and 2015. Annual values (circles) are estimated relative to that in 2000, which is given a value (or ‘index’) of 100. The underlying trend, smoothing out fluctuations, is shown by the solid line. Statistical confidence limits are shown by broken lines. See box to the left.
Why are dormice becoming scarcer?

Loss and fragmentation of habitat – the loss of woodland cover since the early 20th century and the removal of hedgerows as farming intensified after 1945, have reduced the extent of available habitat. Remaining patches of habitat are increasingly isolated, restricting movement between populations and increasing the risk that individual populations become extinct.

Changes in woodland and hedgerow management – traditional coppicing and selective felling are now much rarer than they were. As a result, woodland is less structurally diverse, with fewer open spaces and less new growth of understorey that provides food and nesting sites for dormice. Flail cutting hedgerows, too, leaves less suitable and available habitat.

Traditional coppicing of trees such as hazel, sweet chestnut and hornbeam as part of woodland management maintains new growth and the woody understorey that dormice need. As these practices have declined, so has the quality of habitat for dormice.

A changing climate and unpredictable weather – poor weather adversely affects foraging and breeding success, as well as winter survival rates. Hazel dormice hibernate over winter. During the rest of the year, when they are active, they undergo periods of ‘torpor’ if the weather is bad (dormouse fur is not very waterproof and they will avoid rain). This sensitivity to weather conditions suggests climate change – with warmer, wetter seasons and more extreme weather events – is likely to affect dormouse populations. How it does so, however, will depend on the type of habitat.

In oak woodland dormice tend to breed in spring and early summer, when food is available, and they benefit from warm, dry summers. In hazel woodlands, however, food is more plentiful in autumn and dormice tend to breed later than they do in oak forest. In this case, dormice benefit from cold, dry autumns, which provide ideal foraging conditions and may prolong the time that food is available.

At individual sites in the NDMP, some of these issues will be significant and others will not: they identify the broad threats to dormice nationally. Management practices at NDMP sites are often sympathetic to dormice populations but there is little or no management at some. The threats facing dormice and the efforts needed to preserve populations depend on the location and characteristics of particular sites.

Monitoring at sites is undertaken by trained and licenced volunteers, inspecting nest boxes at a site at least twice each year (in May or June and September or October), but often more or less monthly during the period.

In 1999, the management of the NDMP was taken over by PTES and the survey was put online in 2009, allowing monitors to submit and view data for individual sites. Ian White and Susan Sharafi oversee recording and the database, which currently stands at 100,000 records. The website also holds incidental records of dormice in the National Dormouse Number of records

![Figure 3](image-url) Growth of the NDMP: the total number of dormouse records between 1990 and 2015.
Database (NDD), originally the Dormouse Inventory, set up by Dr Tony Mitchell-Jones at Natural England. NDD records, together with those from the NDMP, are made available through the National Biodiversity Network (NBN) Gateway.

As well as counts, the NDMP represents a wealth of biometric and other data. Fittingly, the first analysis of this dataset was by Paul Bright’s own graduate student, Fiona Sanderson, who looked at the effects of weather and habitat on dormouse abundance, using data from 1991 to 2002. Her analysis showed that cold, dry winters, and warm springs boost numbers of dormice in subsequent years, while hot summers are associated with a greater survival of offspring. The effect, however, is dependent on the type of habitat: warm springs and hot summers benefit populations only where tree species provide food early in the breeding season, such as oak, which supports large numbers of insects.

Breeding success is susceptible to cold, wet weather at peak breeding times. Our climate is changing, with wetter springs and hotter summers forecast. The effect on dormice populations remains to be seen.

The NDMP has also been used in other studies, including work by the Disease Dynamics Unit of Cambridge University’s Department of Veterinary Medicine (looking at disease and seasonal breeding) and two studies by the Centre for Ecology and Hydrology at Lancaster Environment Centre (looking at changing phenology).

The state of Britain’s dormice remains precarious: the population decline apparent at monitored sites continues and a changing climate makes their future uncertain. The pressing need for conservation action, and the form that action might take, have become clear through the work described here, by professionals, volunteers and students alike, and the NDMP is testament to a remarkable collaboration.

Reintroductions

In 1993, the Common Dormouse Captive Breeders Group was set up to provide animals for release. The first reintroduction of captive-bred dormice into the wild took place in Cambridgeshire, the same year, as part of the Species Recovery Plan. The release and follow-up study, supported by the Nature Conservancy Council, were organised by Pat Morris and Paul Bright, alongside the captive breeders group, including Doug Woods, and were achieved with the help of numerous volunteers.

To date, 26 reintroductions have taken place in 12 counties. At five of these release sites, the introduced population has died out. At the others, populations have achieved varying criteria of success, such as breeding or dispersing beyond the site to new areas.

Selected references

Reintroductions

Monitoring

General

Figure 4 The change in population index measured in the NDMP differs between sites. Sites with five or more years’ data are shown above in blue or green to indicate a decrease or increase respectively. The size of the change is shown by a small or large triangle.