

Dormouse

1. A Definition

The dormouse *Muscardinus avellanarius* is set apart from its relatives the mice and rats in that it hibernates and occupies rather different habitats, in particular deciduous woodland with much secondary cover, and species-rich hedgerows.

Indeed the dormouse, which is a strictly nocturnal mammal, spends most of its time well above ground in the canopy and shrub layer, and is rarely seen, despite its attractive golden-brown fur, long bushy tail and prominent black eyes.

The species undergoes a very profound hibernation from October until April, but may also enter a more temporary torpid state during summer, if temperatures fall or if food becomes scarce. During hibernation the body temperature of the dormouse drops to approach that of its surroundings, and heart and breathing rate often drop by 90% or more.

Dormice have a varied diet; flowers and pollen in early summer, fruits, berries and nuts - especially hazel, chestnuts and acorns - later in the summer and autumn. Insects are frequently taken.

2. Why an Action Plan?

The dormouse in Britain is a distinctly southern species of rodent, and whilst still widespread from Devon to Kent (albeit patchily distributed), is rather scarce north of mid Wales, Leicestershire and Suffolk and has undergone a contraction in range in recent decades.

The decline of the dormouse is almost certainly linked to the decrease of hedgerows, fragmentation of woodland (leading to isolated and non-viable populations), and to cessation of woodland management regimes such as coppicing.

Devon represents something of a stronghold of the dormouse in Britain, and we therefore have a particular responsibility to ensure that the County continues to provide a home for this fascinating little mammal.

3. Relevant ecology

The dormouse is a nocturnal animal which lives and feeds among the branches of trees and shrubs. Except for hibernation, it rarely descends to the ground and is reluctant to cross open spaces, perhaps due to the danger posed by owls and other predators.

It feeds on flowers (nectar and pollen) fruits (berries and nuts) and insects (especially aphids and caterpillars). The dormouse requires a sequence of arboreal foods through the year, and certain plants are particularly important at providing this, especially hazel (nuts, insects), oak (insects, flowers), honeysuckle (flowers, fruit, bark provides ideal nesting material), bramble (flowers, fruit) and sycamore (insects, pollen).

Dormice do not normally travel far from their nest (< 70m), so the necessary assemblage of trees and shrubs must be present within a small area. This implies a very species-rich habitat.

Dormice are highly arboreal, so it is important that they should be able to travel from tree to tree without having to cross the ground. A continuous shrub layer is therefore ideal. It is essential that the tree canopy does not cast too much shade, since in dark conditions the shrub layer fails to produce sufficient flower and fruits. Actively coppiced ancient woodland provides the best habitat for dormice.

Dormice are also found in hedgerows, especially those with a diversity of flowering and fruiting shrubs that are infrequently cut, as these provide most abundant food. Hedges are also important dispersal routes and are a vital lifeline linking dormouse populations living in small woodlands or copses. It is essential that hedgerow connections be maintained between small dormouse sites. Old hedges often have gaps in them, and these should be repaired to allow continuity in the hedge as a dispersal route. Mixtures of hawthorn and hazel make very good hedges for dormice, and other species such as honeysuckle and bramble should also be encouraged.

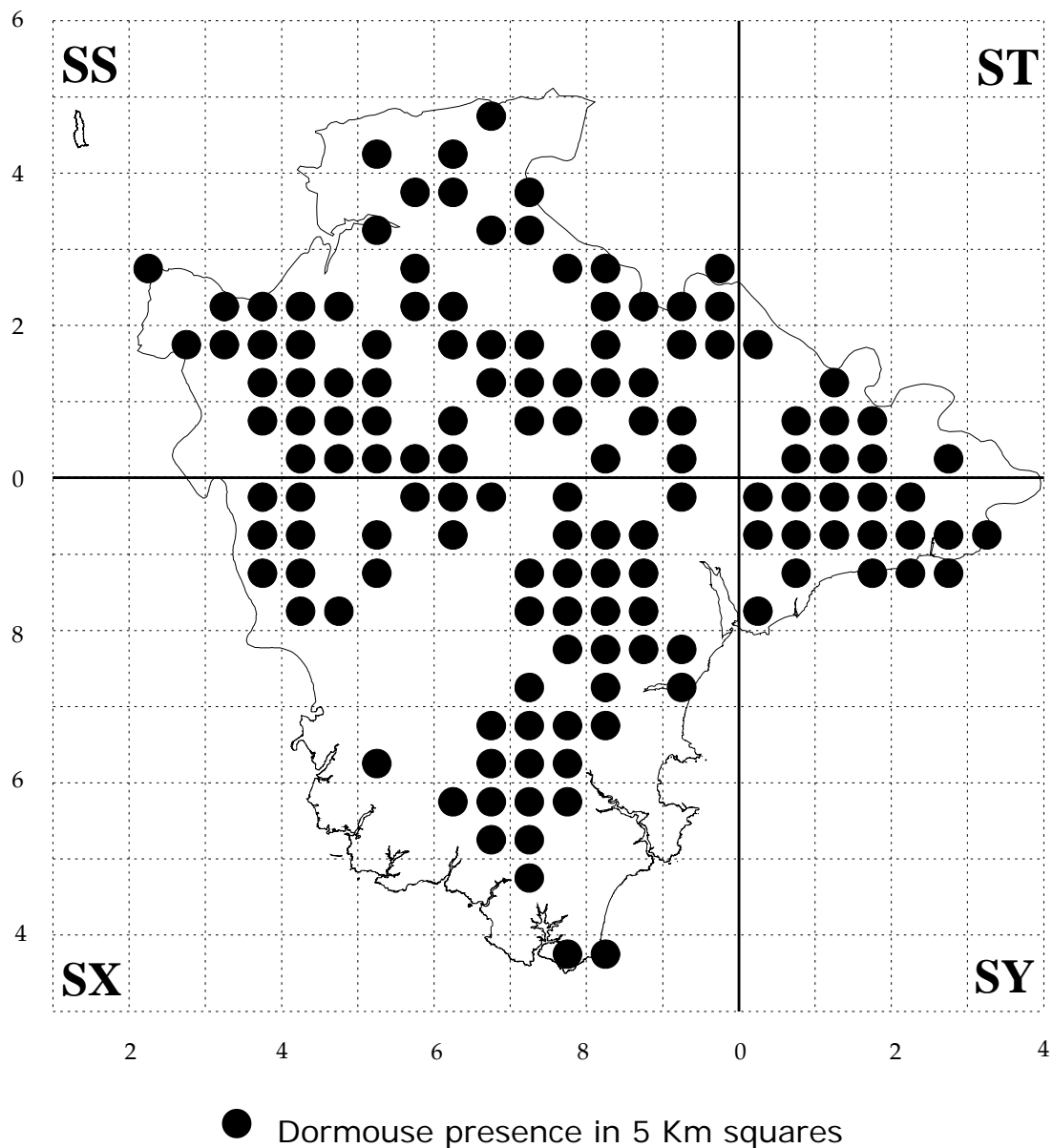
Dormice prefer to build their summer nests above the ground in robust sites such as hollow tree branches and old bird nests, rather than in the bushes and shrubs which provide the bulk of their food. Hence there is a need for some older trees and shrubs (with hollows and rotten branches) to be available. Summer nests are located above ground, often in shrubs a metre or so above the ground, but also up to about 10m in the canopy. Provision of specially-designed nest boxes, as a substitute for natural nest sites, may double the population density. Bird and bat boxes are often taken over by dormice.

Dormice hibernate on or near the ground, often in a damp place. A tightly woven nest is built under moss or dead leaves, or sometimes among tree roots, logs or at the base of an old coppice stool.

Dormice have also been found in other habitats such as heathland, coastal scrub and conifer woodlands but the extent to which these habitats are used is

not known. Due to the difficulty in surveying for this species they may be more widespread in the county than originally thought.

4. Distribution of dormouse in Devon (1998)



(Data supplied by Devon Biodiversity Records Centre and Elaine Hurrell)

5. Current population (1998)

There are no current estimates of the size of the dormouse population in Devon.

The presence of the species in a particular area is usually indicated indirectly by finding discarded food items, usually its favourite food, hazelnuts (on which it leaves characteristic tooth marks) but a recent methodology using plastic nesting tubes as well as dormouse nest boxes has increased recording.

However, these methods give no quantifiable indication of the number of individuals in a particular area.

6. Current problems for dormouse in Devon (1998)

- Changes in woodland management practices, notably cessation of hazel coppice management that results in heavy shading, suppression of re-growth and death of the under-storey where the dormouse obtains most of its food. In some areas there is a problem of increased incursion of stock into woodlands, which graze on saplings, thereby inhibiting woodland regeneration. Trampling of hibernating dormice by stock within woods in the winter is also a hazard. Deer may also cause the same problems as stock.
- Fragmentation of woodlands, caused by either built development such as roads or agricultural clearance, results in isolated, non-viable populations of dormice, with little opportunity for re-colonisation (particularly problematic if hedges which connect woodlands are no longer present). Short distances, possibly as little as 100m, form absolute barriers to dispersal, unless arboreal routes are available to dormice.
- Direct loss, lack of management or inappropriate management, of hedgerows (too frequent cutting causes low availability of fruits, and nuts and few nest sites).
- Other factors undoubtedly play a part in the mortality of dormouse, depending on local circumstances. Predation by cats may be a problem in areas close to human habitation. Competition from grey squirrels (which feed on very similar foods to the dormouse) is another potential factor, but as yet untested.

7. Recent changes in population (1998)

Nationally, the dormouse has experienced a marked contraction in range in recent decades, and has become extinct in up to seven counties where it occurred in the last century, representing about half of its former range.

In Devon, the dormouse appears to be holding its own, and the County is now a major stronghold of the species. However, no detailed quantification of population change has been possible, due to lack of comparable data over time. Having said this, indirect evidence, from the losses of hedgerow length and declines in quality of hedgerows and woodlands that have occurred in the County over the past few decades, indicates that dormice have probably declined in a similar fashion.

8. Current protection

EC Habitats Directive, Annex IVa.

Bonn Convention, Appendix 3.

Wildlife and Countryside Act 1981, Schedule 5.

Conservation (Natural Habitats *etc.*) Regulations 1994. This legislation (Regulation 37) states the requirement to conserve linear features in the wider countryside (a key feature in the ecology of dormouse).

9. Biodiversity planning context

National BAP Context

Species of principal importance in England (NERC Act, S.41):

- Dormouse

Current national BAP targets can be viewed on the [Biodiversity Action Reporting System](#) (BARS).

Associated Action Plans within the Devon BAP:

- Oak woodland
- Species rich hedgerows
- Greater horseshoe bat
- Cirl bunting
- Pearl-bordered fritillary

10. Biodiversity objectives and targets for dormouse in Devon

Please note: objectives and targets have not yet been reviewed.

Objective 1

Ensure no loss of the current range of the dormouse in Devon.

Target: Ongoing.

Objective 2

Gain a better understanding of the distribution of the dormouse in Devon so as to better measure the relative success of conservation actions.

Target:

- Monitoring programme to be established in Devon by 1998; sites found in the Great Nut Hunt in 1993 to be re-surveyed every five years.

Objective 3

Promote a better appreciation of the dormouse and its requirements by land managers, those who grant aid and advise on management, and by the general public.

Target:

- At least one demonstration site of "best practice" for dormouse management to be established by 1999.

11. Wider benefits from pursuing these objectives

The pursuit of the objectives and targets set out in this plan will not only benefit the dormouse. Conservation has wider benefits and advantages for society, by providing a resource which is the basis of many aspects of the local economy, and by adding to the quality of life of the people of Devon in ways which are beyond financial measure. Thus enhancing the interests of biodiversity will also enhance the interests of society as a whole. Some of the wider benefits are as follows.

Retention and sympathetic management of rambling hedges as a traditional wildlife habitat and landscape feature of Devon. The County's hedges are a vital factor in attracting visitors, and maintenance and enhancement of them can only add to Devon's "green" tourism trade.

Management of woodlands, such as coppicing revives traditional rural skills, and as a bi-product may stimulate local markets for products such as hurdles and poles.

12. Priority or indicative actions for dormouse in

Devon

Action	Key Partners
1. Where appropriate, ensure agri-environment and Woodland Grants schemes include the maintenance and enhancement of woodland and hedgerow habitat for dormice in management plans.	DEFRA; FC; DWT; FWAG
2. Encourage owners of woodlands and hedgerows to enhance their habitat for dormice, including the presence of shrub and tree species and subsequent management. All advisory bodies take account of dormice in their advice to landowners.	FWAG; DWT; FC; WT; EN; DHG; NPAs
3. Raise awareness of dormouse status and specific habitat requirements through articles, events and training. Encourage public participation in nation recording schemes (such as the previous Great Nut Hunt).	DWT; EN; FWAG; MS
4. Continue survey and monitoring of existing and potential new sites by the use of nest boxes, nest tubes and nut hunts.	DWT; EN; MS
5. Ensure data gathered from monitoring surveys is collected centrally at Devon Biodiversity Records Centre and passed on to JNCC for nation database.	DWT; EN; DBRC
6. Ensure planning authorities take into account PPG9 (and revisions) and the Hedgerow Regulations in all developments where suitable habitat occurs. Where possible avoid habitat fragmentation.	LAs; Highways Authorities; Utilities; EN

Dormouse Action Plan Champion - Devon Wildlife Trust

Abbreviations used in text and table

BAP	Biodiversity Action Plan
DEFRA	Department of Environment, Food and Rural Affairs
DHG	Devon Hedge Group
DWT	Devon Wildlife Trust
EN	English Nature
FC	Forestry Commission
FWAG	Farming and Wildlife Group
LAs	Local Authorities
MS	Mammal Society
NPAs	National Park Authorities
WT	Woodland Trust