

Devon hedges and wildlife 3: dormice



*Young dormouse
in a Devon hedge.*
©Robert Wolton

Hedges are an important habitat for Britain's only native dormouse, the hazel dormouse. Not only do dormice use hedges for moving between woodlands but we now know that strong populations can live in hedges throughout the year.

Devon's hedges are a national stronghold for this declining and European Protected Species. However, even here they are at risk from unsympathetic management. This guidance outlines what we know about good dormouse hedges, and how to improve the habitat for these attractive mammals.

Dormice are small arboreal rodents, weighing just 15-30 g, living in trees and shrubs or among climbing or scrambling plants. They come to the ground during winter for hibernation and in summer to collect nesting material. Dormice are reluctant to cross even small gaps in day to day commuting between their nests and food sites. However, when dispersing, they have been known to cross several hundred metres of open ground. In hedges little is known about their movements, although it is thought that their home ranges may extend over a few

hundred metres and radio-tracking has revealed a dormouse may travel back and forth over 300 m in a night while foraging.

Food

Feeding mainly on fruits and flowers, they supplement their diet with insects. Early in the year nectar and pollen are important, while in the autumn, when they need to fatten up for hibernation, good crops of nuts and berries help them to put on weight quickly.



Blackberries are a favourite dormouse food.
©Robert Wolton

Nests

Dormice spend much of their lives sleeping or torpid, so safe nesting sites are very important to them. During the winter they hibernate in nests at or just below ground level. These may be among tree roots, under flat stones, beneath moss or leaf litter, or in the nooks and crannies of a bank. Occasionally hibernation nests are found in open areas covered by little more than a few leaves. In Devon, hibernation usually starts in November or December and finishes between March and mid-April depending on the weather. Breeding usually takes place in July when litters of four or five young are born. Second litters are sometimes produced but the young have very little time to fatten up for the winter and may not survive.

Summer nests consist of a woven ball of grasses or stripped bark (especially honeysuckle), usually with an outer layer of leaves, and are about the size of a grapefruit when used for breeding or a tennis ball when just for shelter. In hedges these nests are found in dense, usually thorny or prickly, vegetation. Characteristically, unlike bird nests, they do not have a clear entrance hole. Favoured nesting sites are thick holly or gorse bushes, in blackthorn or, less frequently, hawthorn where branches form dense knots (knuckles) if the hedge has been repeatedly cut back to nearly the same height, and in bramble and rose margins. The nests are usually located below 2 m in height and may be close to the ground, hidden within grass or rush tussocks. Dormice may also use cavities in mature hedgerow trees for nesting.



Hibernation nest (about the size of a small orange) on the surface of a hedgebank. A thin covering layer of fallen leaves has been removed. ©Robert Wolton



A summer dormouse nest in a hedge's bramble margin. ©Robert Wolton



Dense hedges with several years' growth and bramble margins provide much food and safe nesting places.

©Robert Wolton

What makes a good dormouse hedge?

Although any hedge is better than none, at least for dispersing dormice, a thriving population of dormice needs an ample food supply together with safe nesting places. Large, thick and species-rich hedges will meet these needs, particularly those with bramble or rose margins. Devon hedges can provide particularly good habitat because the bank offers safe and secure sites for winter nests with little risk of flooding or trampling.

To be in good condition for dormice, hedges have to be managed. The main types of management are trimming, laying, coppicing, repairing banks and planting. Getting the cutting regime right is particularly important, as explained below. Dormice feed on a wide range of food including insects, flowers and fruits. Farms with hedges at different growth stages are likely to provide all the resources dormice need.

Hedge cutting

Periodic cutting is necessary to keep hedges dense and bushy and lengthens the time before the hedge has to be rejuvenated by laying or coppicing, expensive and labour-intensive activities.

If a hedge is cut every year, shrubs and trees produce very few flowers and so there are hardly any berries like sloes, haws or those of the rowan tree for the dormice to feed on in the autumn. Blackberry and rose hip crops are also reduced by annual cutting.

Nevertheless, hedges that are cut every year can be very dense and dormice nests have been found in them, although it is probable that population levels are low, particularly in hedges which are less than 1 m high above the bank and less than 2 m wide. On the other hand, really good crops of berries and nuts are found only in hedgerows that have not been cut for some six years. However, such hedges are usually open inside, providing poor nesting habitat unless they contain dense holly bushes or good tangles of bramble or rose.

So, no single cutting frequency is ideal for both food and nesting. Instead, try and achieve a wide variety of different hedge structures in a small area. Cut about half of the hedges on a three to five year cycle, particularly those with plenty of blackthorn, leaving those approaching the time when they will need laying unmanaged for longer to produce full berry and nut crops. Avoid cutting more than half of the hedges in the management unit in any one year, and encourage thick bramble or rose margins. If a hedgerow must be cut every year, perhaps for safety reasons, then try and allow the hedge to expand a few inches outwards and upwards each time by not cutting back to the same point - this will give a chance for at least some tree or shrub berries to be produced.

If possible, cutting should be carried out between November and early March to reduce the chance of damaging late breeding nests. However, in Devon the ground is often too soft by November for tractors to travel on the land, so it is not feasible to cut later than October or even September. Any damage to dormice that results from such early cutting is unfortunate, but overall the dormouse population is likely to benefit because without some cutting the overall suitability of hedgerows in an area may decline.



Dense blackthorn growth created by regular hedge trimming is a favoured dormouse nesting place.
©Robert Wolton

Hedge laying and coppicing

Laying (steeping) is the most common and effective method of rejuvenating thin or gappy hedges and re-creating a dense stock-proof barrier. Unlike coppicing, a recently laid hedge will still provide cover for dispersing dormice, but food supplies and nesting sites will be much reduced for a year or two. To lessen this impact, many Devon hedges can be laid one side at a time, with an interval of two years between sides, so providing better continuity of cover and food.

If the trees and shrubs in a hedge become too big to lay, it can be rejuvenated by coppicing. Although the re-growth from cut stumps can be vigorous, a coppiced hedge will be unsuitable for dormice for a few years. This may have serious repercussions for the local dormouse population if the hedge is the sole link between areas of good dormouse habitat. So, try and lay hedges that are critical for landscape connectivity rather than coppice them.

In any event, try not to lay more than about a third of hedges in an area in any one year, or to coppice more than a quarter of them, and carry out such work between November and mid-March.

Bank repair

Since dormice living in Devon hedges will be using the banks for hibernation, repairs to them and to any stone facing should preferably be done in September or October, after the main breeding season and before hibernation begins.

Hedge planting

Planting a new hedge or filling up gaps in existing hedges is often an excellent idea, because it creates additional habitat and increases connectivity and dispersal routes. The more complex and intact the network of hedges the better, reducing the risk of isolation and improving the long-time survival prospects of the dormouse population.

When selecting shrubs and trees for planting, choose a range of native species which are typical of the area. Try to use plants grown from locally-collected seed or cuttings since these are more likely to flower and fruit at times appropriate to the area and its wildlife. If you can, obtain wild honeysuckle *Lonicera periclymenum* plants; these will add greatly to the attraction for dormice, providing a source of nesting material as well as flowers and fruits.



Landscapes with well-connected species-rich hedges at different stages in the management cycle are best for dormice. ©Robert Wolton

Gateways and other gaps

Since dormice prefer not to cross open ground, try and keep gateways and other gaps in hedges small, preferably less than 5 m wide. When creating new gateways, wooden gates may be preferable, being easier to cross than metal ones.

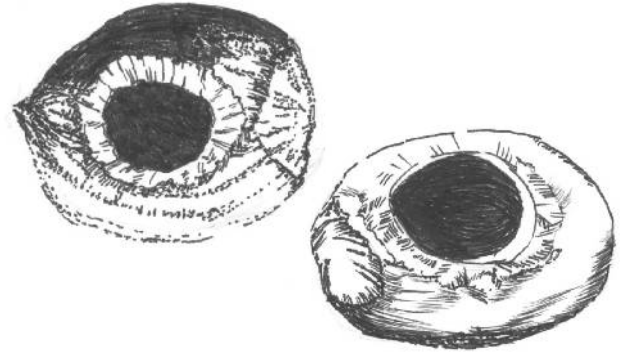
How can I find out if dormice are present?

Unless you are very lucky you are unlikely to see or find a dormouse by chance. There are three main ways to look for them, but unfortunately none is guaranteed; it is very difficult to prove that a hedge is not used by dormice and, in Devon, it is usually safest to assume that it is.

The first way to find out if dormice may be present is to look for hazel nuts since dormice open these in a characteristic way. However, even if hazel is present in a hedge, nuts will only be produced on bushes that have not been cut for some five years, and even then the grey squirrels tend to get to the nuts first. If you do find nuts with holes in them, then look for those with a precise circular hole in the side, 5-8 mm across, with a smooth rim with faint diagonal tooth marks around the edge. Similar holes are made by wood mice and bank voles but these don't leave such a precise round hole or one with a smooth rim, the tooth marks being stronger and perpendicular to the edge.

The second way is to look for natural nests, as described above. The best time to search for these is in October when the leaves are falling and the normally very effective camouflage that nests have starts to fail. Even so, nests are often hard to locate and failure to find any should not be taken as evidence that dormice are absent.

Thirdly, you can place nesting tubes in hedges to mimic holes in trees. Research has shown that dormice will use tubes even in hedges that are in good condition for natural nests. But please be aware that



Hazelnuts opened by wood mouse (left) and dormouse (right).

©Heather Harley after original in first edition

although anyone can put up tubes and inspect them, once you have found a dormouse nest you need a licence from Natural England to carry out further checks.

Dormice and the law

Across Europe the distribution of hazel dormice has declined considerably in recent decades, as their woodland, scrub and hedgerow habitats have been lost or changed. As a result the species receives full protection under UK and European law. It is illegal not only to kill or injure them deliberately but also to damage or destroy their breeding sites or resting places. Such damage or destruction is an offence whether it was deliberate or not. It is also an offence to disturb dormice deliberately if it will reduce their chances of surviving or breeding, or reduce local populations.

Hedge management will inevitably cause some disruption to dormice. Following the best practice outlined here will show that you have taken all reasonable steps to comply with the legislation. If you do, inadvertently, cause some damage, the risk of you being prosecuted is likely to be reduced if you have followed this guidance.

Since dormice are present in many of Devon's hedges, it is safest to assume that they are present in all and to act accordingly. This section presents current (2014) understanding of best practice and its recommendations should be followed unless you are confident that dormice are absent.

Further information

1. Bright, P. & MacPherson, D. 2002. *Hedgerow management, dormice and biodiversity*. English Nature Research Report 454. English Nature, Peterborough.
2. Bright, P.W., Morris, P.A. & Mitchell-Jones, A. 2006. *The dormouse conservation handbook*. 2nd edition. English Nature (Natural England), Peterborough.
3. Chanin, P. & Woods, M. 2003. *Surveying dormice using nest tubes. Results and experiences from the South West Dormouse Project*. English Nature Research Report 524. English Nature (Natural England), Peterborough.
5. Juškaitis, R. & Büchner, S. 2013. *The hazel dormouse*. NBB English Edition. Westarp Wissenschaften (VerlagKG Wolf). 173pp.
6. Wolton, R. J. 2009. Hazel dormouse *Muscardinus avellanarius* (L.) nest site selection in hedgerows. *Mammalia* 73: 7-12.
7. Wolton, R. J. 2010. *Can nest tubes always detect dormice?* The Dormouse Monitor. People's Trust for Endangered Species. Spring 2010, pp 14-15.

Young dormice in a Devon hedge. ©Robert Wolton

