

PART 2

Woodland Management in the presence of the dormouse – Guidance for compliance with The Conservation (Natural Habitats, &c.) (England and Wales) Regulations 1994 as amended by The Conservation (Natural Habitats, &c.) (England and Wales) (Amendment) Regulations 2007 (The Habitats Regulations)

1. Purpose of document

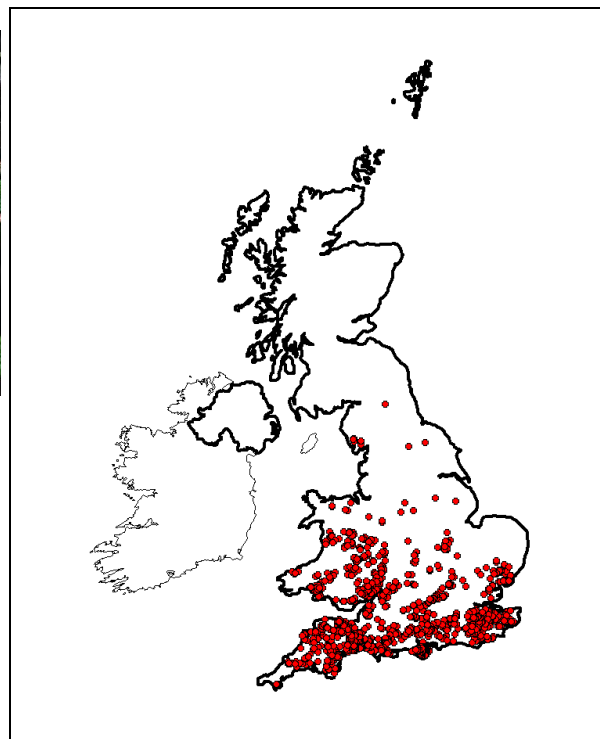
To provide advice for woodland managers and operators on a) how to establish presence of dormouse (*Muscardinus avellanarius*), particularly their breeding sites or resting places, and b) how to manage woodlands so as to avoid or minimise the risk of committing offences under the Habitats Regulations. The Dormouse is protected under the Habitats Regulations and are European Protected Species (EPS). Information on long-term habitat management to benefit the dormouse is also provided.

2. Suggested methods of establishing the likely presence of dormouse

There are a number of ways of determining the likelihood of EPS presence, listed below.

- a. *Is your woodland approximately within current known range of the species?*

Please note not all recent occurrences of dormouse may be mapped.



Dormouse (*Muscardinus avellanarius*).

Map: Dormouse Conservation Handbook (2006).

b. Is your woodland likely to be supporting dormice?

Dormice live in early stage and older broadleaved woodland and sometimes in conifer plantations on ancient woodland sites [PAWS], and are particularly characteristic of historic coppice woodland. They may also be present in ride edges and shrubby glades, in scrub and thick hedgerows connected to woodland, and well-vegetated open areas within plantations. The best conditions are more likely within coppiced woodland and woodlands containing areas prior to canopy closure (5-15 years) and especially contiguous areas / compartments / coupes with different ages and types of woodland structure. The larger the total area of connected woodland/scrub, called the 'woodland unit', especially above 10 hectares, the higher the likely presence of dormouse. The habitat quality, as indicated by the features in Table 1 will affect both the likely presence and dormouse population density. Neither size of habitat features nor any absence of features excludes the possibility of presence.

Table 1 – dormouse habitat features

Favourable habitat features	Unfavourable features
<ul style="list-style-type: none"> • Integral with or attached to other areas of woodland, PAWS, scrub or young (including conifer) plantation. • Wide range of broadleaved species and ages present, in patches, scattered throughout, or around the edge • Shrub layer present, especially with hazel, honeysuckle or bramble • Species rich edge strip or shrub dominated ridesides or large patches • Canopy connections across tracks or thick, wide hedgerow connections to other nearby suitable habitat • Mixture of nurse conifer rows and broadleaved planting • Contains fruiting hazel or sweet chestnut – ideally as managed coppice • Prethicket or no thinning history for conifers. 	<ul style="list-style-type: none"> • Small isolated wood or adjacent only to an old conifer plantation • Plantation already subjected to several traditional rack thinnings • Densely shaded with little or no understorey • Signs of deer/stock eating regenerating trees/shrubs, or lack of regeneration • Preponderance of waterlogged ground in winter • History of clearfelling of very large coupes relative to the woodland area, including isolating other connected harbourage • No access to large fruiting trees • Few native broadleaved trees and shrubs ie. 'cleaning' during thinning • All nurse conifers removed in one operation • Site above 300m altitude • Short rotation coppice in cycle.

Further information on habitat requirements of the species is available from the Dormouse Conservation Handbook (2006), also see further reading list.

c. Consult the National Biodiversity Network

The National Biodiversity Network (NBN) is available on the web for presence of dormouse near or in your woods, and by using the interactive map www.searchnbn.net/interactive/map.jsp?srchSp=NHMSYS0000080214, zoom to your area of interest and seek the records from more recent decades (not all occurrences of species may be shown on the map and lack of records does not necessarily confirm absence). Your local Countryside Council for Wales or County Wildlife Trust representative, is also likely to be able to give site specific information on likelihood of dormice presence as may the Local Biological Records Centre www.nfbr.org.uk Natural History Societies and local Mammal Groups - contact details from: <http://www.abdn.ac.uk/mammal/index.shtml>

d. Confirming presence of dormouse by looking for signs or indicators

Dormice are small animals that leave few obvious signs. Their hibernation nests are small [7-10cm, made] of woven of grasses, and are concealed on the ground. Their summer breeding nests are above ground, often in the shrub layer, but sometimes higher in the canopy. Dormice are usually thinly spread throughout the woods they occupy, with only a few individuals per hectare, and both their breeding and hibernation nests are difficult to find. If you do come across a nest you must be careful not to interfere with it in any way as this in itself could constitute an offence.

Other signs of their presence include holes made in hazel-nut shells with a characteristic smooth inner surface to the hole or stripped honeysuckle bark (used in making nests).

You may wish to consider engaging local specialists, for example, a local mammal group may be interested in carrying out a site visit in your woodlands and this could provide information on dormouse presence. For more information on surveying for dormouse (especially where no hazel occurs, or nest tubes and nest boxes are used) see the Dormouse Conservation Handbook (2006).

If you have evidence that dormice are present through signs described above, and you wish to perform operations that are likely to cause an offence (Table 2) a licence will be required before the operation can be undertaken. The EPS licence application will require details about dormouse presence and evidence that there is no satisfactory alternative to committing the offences in question i.e., damaging or destroying dormouse resting or breeding sites even when dormice are not present. Licences are to be granted for specific circumstances and are subject to strict tests. There is no guarantee that a licence will be granted. Speculative licence applications will not be considered. However, as with many woodland species, Dormice can thrive as a result of sensitive woodland management and this will be taken into account when any licence application is made.

If by self-assessment (following the guidance above) and/or specialist survey you are confident that dormice are not using your woodland then no further action is necessary and the operation may proceed. It would be sensible to

keep a record of your decision and information used to reach it (for example a specialist survey). If evidence of dormice is subsequently discovered during operations (especially nests), you should stop work, consult the Statutory Nature Conservation Organisation (SNCO) and review your plans as required. It is therefore important for operators to remain vigilant for dormice while undertaking work.

3. How to avoid or reduce the impact on woodland EPS whilst carrying out woodland operations

Routine forestry / woodland management activities can potentially result in offences being committed if EPS or their breeding sites or resting places are present and it is vital that managers review planned activities to identify such risks. The offences that may be committed under Regulation 39 are listed in Annex A in the Part 1 guidance.

The following types of operations have a risk of committing offences if dormice are present:

- Harvesting, including felling or thinning of stands
- Ground preparation
- Tending and establishment
- Construction & maintenance of infrastructure
- Management of open space

Table 2 provides further information on how you may alter these operations to reduce the risk of committing an offence and the need for a licence. The aim should be, during operations, to avoid damaging or destroying a resting place or carrying out activities that disturb dormice in their nests. Dormice are unable to move around a woodland quickly, (for instance to flee from a threat), their breeding sites and resting places (nests) are very hard to find and their terrestrial resting places are likely to be distributed throughout the woodland. Thus, providing an alternative operation, or location for the operation, that will not damage or destroy their resting places is difficult. If the operation you are planning does not have a satisfactory, low-risk alternative as indicated within Table 2 then you may decide to apply for a licence. If a licence is granted, conditions will apply that will require you to follow a best practice but practical approach as described in Table 3, adjusted for particular local circumstances, eg extreme soil conditions, storm events.

4. Consider potential for long-term provision of habitat for dormouse

In Britain the dormouse has undergone a serious decline in the last 30-40 years, largely attributable to habitat fragmentation. Dormouse is now absent from most of northern Britain but there is a real opportunity for woodland owners to conserve this charismatic species where it is present. Consider the potential for maintaining populations by planning regular but sensitive active management to provide a continuity of habitat over time that will support the favourable conservation status of this species. Woodland habitats can be improved for dormouse by encouraging long-term presence of a shrub layer through intervention which ensures plant succession, and by increasing the

overall contiguous area composed of a mosaic of woodland ages and hedgerows. Specific guidance includes:

- Maintaining and promoting a diverse matrix of different aged habitats with patches of early growth e.g. by creating small glades during thinning or a patchwork coppice coupe style management [even of conifers]. More frequent intervention may be required in younger conifer woodlands compared to older broadleaved woodlands.
- Ensuring rack, ride and track management enables cross-track canopy connections to strengthen. Providing connections across open ground to increase the size of the connected woodland unit for dormice. Enrichment planting and encouraging a range of broadleaf species [especially in conifer plantations]. Provide a shrub-rich patchwork within plantation woodland by heavily thinning small areas, or small clear-fells. Management against deer browsing is often necessary.

Good practice reference list

- Bright, P., Morris, P. & Mitchell-Jones, T. (2006) *The dormouse conservation handbook*. Second edition. pp74. English Nature, Peterborough. [NB Pre 2006 legislative changes]
- Sanderson, F., Bright, P. & Trout, R.C. (2004) Managing woodlands for dormice. In: Eds. Quine, Trout & Shore. *Managing woodlands and their mammals*. Joint FC and Mammal Society conference, November 2002. 19-24. Forestry Commission. Edinburgh.
- Thompson, R.N., Humphrey, J.W., Harmer, R. & Ferris, R. (2003) Restoration of native woodland on ancient woodland sites. Forestry Commission, Edinburgh. pp52.
- Eds: Corbet & Harris. (1991) The hazel dormouse. In: *The handbook of British mammals*; 3rd Edition. Blackwells, Oxford. Eds Gurnell & Yalden [NB.5th edition in press, winter 2006]

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Table 2 Forest operations, risk of committing an offence associated with each operation and procedure for reducing risk.

Forest operations are in **bold** type, descriptions in plain type; low risk alternatives are proposed where possible and the approach to managing risk is suggested.

Risk of causing an offence	Operations that are likely to damage or destroy breeding or resting places of dormice (high risk).	Alternative approaches to high risk operations that may reduce risk.	Managing risk: Options for low risk approach	
Operation	Sub-operations (and brief description of impact)		Safest	Some risk
<i>HARVESTING</i>	Thinning can significantly disrupt feeding activities and kill foraging individuals and damage nests even during period of least impact (see calendar of dormouse activity); in winter damages and destroys hibernation sites and in summer breeding and resting sites.	No low risk alternative	N/A	N/A
	Clearfelling: can significantly disrupt feeding activities and kill foraging individuals and damage nests even during period of least impact (see calendar of dormouse activity); in winter damages and destroys hibernation sites and in summer, breeding and resting sites.	No low risk alternative	N/A	N/A
	Coppicing (any length cycle): in winter damages and destroys hibernation sites and can kill hibernating individuals; in summer, damages and destroys breeding and resting sites.	No satisfactory alternative	N/A	N/A
	Rejuvenating derelict coppice: in winter damages and destroys hibernations sites and can kill hibernating individuals; in summer, damages and destroys breeding and resting sites.	No low risk alternative	N/A	N/A

	Removal of brash: can damage and destroy hibernation sites.	1. Swift removal of cut material before dormice hibernate or during same winter as cutting	1	N/A
	Extraction of timber: all ground nests on extraction route will be damaged or destroyed (removal of trees along route - treat as for Thinning operation).	No low risk alternative	N/A	N/A
	Timber stacking on rideside: can damage or destroy hibernation nests.	1. Stack timber on sparsely vegetated ground where no hibernation nests are likely. 2. Remove timber stack in the same winter/spring as when stacked.	1+2	1
<i>GROUND PREPARATION</i>	Scarification/ploughing/cultivation of well vegetated areas: damages and destroys hibernation and nest sites.	1. Only work in areas before they become well vegetated, e.g., during the first 2 winters following clearfelling. 2. Leave edges of areas that have become well-vegetated un-worked.	1+2	N/A
	Brash burning: can damage or destroy hibernation sites if carried out in hibernation period.	1. Confine brash burning to limited areas only. 2. Carry out operation in period of least impact (labelled 'Y' on calendar of dormouse activity).	1+2	N/A
	Brash clearing: can damage or destroy hibernation sites if carried out in hibernation period.	1. Swift removal of cut material before dormice hibernate during same winter as cutting.	1	N/A
<i>TENDING & ESTABLISHMENT</i>	Chemical weeding by over-spraying in active and hibernation season: disturbs hibernating dormice.	1. Spot -spray or targeted spraying. 2. Only work in period of least impact (labelled 'Y' on calendar of dormouse activity).	1+2	1 or 2
	Brush/scrub cutting or clearance: in winter can damage and destroy hibernations sites and in summer breeding and resting sites.	No low risk alternative	N/A	N/A

<i>MANAGEMENT OF OPEN SPACE</i>	Mowing ride edges: can damage or destroy hibernation sites and resting sites.	1.Restrict mowing to existing short sward area. 2.Only mow in autumn	1+2	N/A
	Road edge work involving removal of road/ride edge trees: destruction of breeding and resting sites.	No low risk alternative		
<i>CONSTRUCTION & MAINTENANCE OF INFRASTRUCTURE</i>	Creating roads/tracks and other permanent woodland clearance: clearance of woodland in winter can damage or destroy hibernations sites and in summer, breeding and resting sites.	No low risk alternative	N/A	N/A
	Creating lorry access or turnaround: can damage or destroy hibernation nests.	1. Creating lorry turnaround and/or stacking area on sparsely vegetated ground where no hibernation nests are likely.	1	N/A

Table 3 – Standards of working practice required for carrying out operations under an EPS licence – operators will be expected to attain best practice with all conditions being met for each operation

Operation	Sub-operations	Best practice guidance
<i>HARVESTING</i>	Thinning including cleaning broadleaves from conifer plantations on ancient woodland sites (PAWS)	<p><u>Small woods (less than 10 ha)</u></p> <ul style="list-style-type: none"> • Where possible carry out work in period of least impact (labelled ‘Y’ in Calendar of dormouse activity - Figure 1). • As a guide, limit overall harvesting operations to maximum of 33% of unit*. • Of the area to be worked, restrict thinning to less than 25% of the favourable habitat and less than 50% of the unfavourable habitat (see Table 1 for definitions of ‘favourable’ and ‘unfavourable’). • Leave the remaining areas of habitat unthinned for several years. • Plan ahead to avoid any other major operations (see table 2) that will reduce habitat quality within 5 years. <p><u>Large woods (greater than 10 ha)</u></p> <ul style="list-style-type: none"> • Where possible schedule most work outside period of greatest impact (labelled ‘N’ in Calendar of dormouse activity – Figure 1). • As a guide, limit overall harvesting operations to maximum of 50% of unit*, leaving minimum block[s] (5-10 ha) of the woodland unit unthinned. • Of the area to be worked, restrict thinning to less than 33% of the favourable habitat and less than 66% of the unfavourable habitat (see Table 1 for definitions of ‘favourable’ and ‘unfavourable’). • Leave the remaining areas of habitat unthinned for several years. • Plan ahead to avoid any other major operations (see table 2) that will reduce habitat quality within 5 years. • woodland unit is defined as total area of connected woodland/scrub in the control of the forester/manager.

	<p>Clearfelling including felling of conifers from PAWS for restoration</p>	<p><u>Small woods (less than 10 ha)</u></p> <ul style="list-style-type: none"> • Where possible carry out work in period of least impact (labelled 'Y' in Calendar of dormouse activity - Figure 1). • As a guide, limit overall operations to under 20% of woodland unit in a 5 year period. • Of the area to be worked, restrict felling to less than 15% of the favourable habitat and less than 25% of the unfavourable habitat (see Table1 for definitions of 'favourable' and 'unfavourable'). • Retain remaining areas of habitat for at least 5 years. • Plan ahead to avoid any other major operations (see table 2) that will reduce habitat quality within 5 years. <p><u>Large woods (greater than 10ha)</u></p> <ul style="list-style-type: none"> • Where possible schedule most work outside period of greatest impact (labelled 'N' in Calendar of dormouse activity – Figure 1). • As a guide, limit overall operations to up to 33% of woodland unit in a 5 year period (adopt a sliding scale in relation to size). • Of the area to be worked, restrict felling to less than 25% of the favourable habitat and less than 50% of the unfavourable habitat (see Table1 for definitions of 'favourable' and 'unfavourable'). • Retain remaining areas of habitat for at least 5 years. • Plan ahead to avoid any other major operations (see table 2) that will reduce habitat quality within 5 years.
	<p>Restoring derelict coppice</p>	<ul style="list-style-type: none"> • Schedule most work within period labelled 'a' in Calendar of dormouse activity - Figure 1. • Restrict derelict coppice operations to a maximum of 25% of unit area in first year, if remainder is connected to adjoining suitable woodland and then c. 10% annually to complete restoration of derelict area.
	<p>Traditional coppicing cycle</p>	<ul style="list-style-type: none"> • Schedule most work within period labelled 'a' in Calendar of dormouse activity - Figure 1.

		<ul style="list-style-type: none"> • Restrict coppicing to up to 25% of unit in any one year but averaging at 10% of total coppice per year over the 15 to 2 year cycle. • Follow a patchwork cutting cycle ensuring new growth is alongside older growth.
	Extraction of timber	<ul style="list-style-type: none"> • Where possible schedule most work outside period of greatest impact (labelled 'N' in Calendar of dormouse activity - Figure 1).
<i>GROUND PREPARATION</i>	Scarification/ploughing/cultivation	<ul style="list-style-type: none"> • <i>Avoid working in hibernation period</i> • <i>Only disturb small areas of ground and target those areas with sparse vegetation cover.</i>
<i>TENDING & ESTABLISHMENT</i>	Brush/scrub cutting or clearance	<ul style="list-style-type: none"> • If possible work in winter (period labelled 'a' in Calendar of dormouse activity - Figure 1) and work at small scale (e.g. 10% of woodland unit in one season).
	Brushing, pruning (including young conifers on PAWS)	<ul style="list-style-type: none"> • If possible brush outside period of greatest impact (labelled 'N' in Calendar of dormouse activity - Figure 1).
<i>MANAGEMENT OF OPEN SPACE</i>	Mowing ride edges	<ul style="list-style-type: none"> • Mowing regimes are employed for a variety of reasons and interests. As such the woodland manager will need to refer to the Dormouse calendar to reduce the risks to dormice through tailoring the mowing regime accordingly. This may require discussion with the licensing body.
	Road edge work within dormouse site	<ul style="list-style-type: none"> • Seek to incorporate in thinning/clearfell operations. Where not possible, limit scale and undertake works in autumn.
<i>CONSTRUCTION & MAINTENANCE OF INFRASTRUCTURE</i>	Creating roads/tracks and permanent woodland clearance	<i>Follow guidance for CLEARFELLING.</i>
	Creating lorry access or turnaround	<i>Follow guidance for CLEARFELLING.</i>