Guidance on managing woodlands with dormice in England

1. Background and purpose of document

The Habitats Directive[1] aims to conserve various species of plant and animal which are rare across Europe, and it requires Member States to provide legal protection for these species. Most of the protected species which are found in the UK (European Protected Species, or EPS) are associated with woodland, in particular hazel dormouse, otter, many of the species of bat, great crested newt, smooth snake and sand lizard. The EU Directive was transposed into UK law by the Habitats Regulations in 1994. However, the Regulations were amended in August 2007, and this has removed the 'incidental result' defence under which many forestry operations were carried out.

This document is one of a series providing guidance for woodland managers and operators on how to conserve these European protected species and reduce the risk of anyone committing offences under the Habitats Regulations. It focuses on our native or hazel dormouse (*Muscardinus avellanarius*).

Guidance is given on routine and on-going forestry and woodland operations and activities. For more unusual operations, such as development, construction or land-use change (i.e. removal of forest) you should seek further advice from the Forestry Commission (FC). Similarly, whilst it covers low-key recreational usage, expert advice should be sought for more unusual or intensive activities in woodlands.

This guidance should be used in conjunction with wider guidance on forestry and woodland management, and should not be followed in isolation. Sources of more detailed information on conserving the species are given in the final section.

The FC and Natural England (NE), with assistance from relevant conservation organisations, have produced this suite of guidance to help you understand the legislation. Following the guidance will show that you have taken all reasonable steps to comply with the Regulations. If the guidance has been followed, but you nevertheless do inadvertently cause damage, disturbance or harm to this protected species, a prosecution is unlikely to be considered to be 'in the public interest'[2]. However, you are reminded that it remains your responsibility to ensure all your actions do comply with the law.

This is 'interim' guidance that will be reviewed in the light of experience over the first 6 months after publication. We therefore welcome suggestions from users during that period on how it could be improved.

[1]The formal title is: Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.
[2] The public interest test is used by the regulators to decide whether it is appropriate to take a matter any further bearing in mind all the circumstances of the case.

2. Complying with the Habitats Regulations

There is an inherent difficulty in complying with the Habitats Directive, because whilst habitat management is often needed to conserve rare species, carrying out such management could contravene the strict protection that the Directive requires. This contradiction is recognised in a guidance note issued by the EC (see reference list below). This recommends that Member States produce codes of conduct, or guidance, and that these should: *"offer flexibility, i.e. while recognising that absolute protection for all individuals of a species cannot be guaranteed, ensure that any harmful action takes full account of the conservation needs of the species/population concerned".* The EC also states that anyone complying with such codes of conduct should be protected from prosecution, but conversely there must be a legal process for enforcement in cases of non-compliance with the legislation.

Conserving rare species present in a wood requires a careful and well-planned approach to woodland management. Ensuring that the requirements of the Habitats Regulations are also satisfied is an additional challenge. A systematic approach will be required in order to minimise the risk of committing an offence. This guidance is structured around the following six stages:

- Is a protected species **present** in the wood?
- What woodland **habitats** does this species use?
- What activities and operations could potentially cause **damage, disturbance or harm** to the species?
- What operations can go ahead as **'good practice'**?
- When, and how, should I seek a **licence**?
- What else can I do to help **conserve** this species?

The phrase 'causing damage, disturbance or harm' is actually a simplification, and it is important to understand the precise offences that can be committed. These can be summarised as follows:

- *Damaging or destroying the breeding site or resting place of a protected species (even if unintentional or even when the animal is not present)*
- *Deliberately killing or injuring a protected species or destroying its eggs*
- *Deliberately disturbing a protected species in a manner that:*
  - either significantly affects it's ability to survive and breed;
  - or, as a consequence, significantly affects the local population.

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than just intentional and could be thought of as including an element of recklessness.

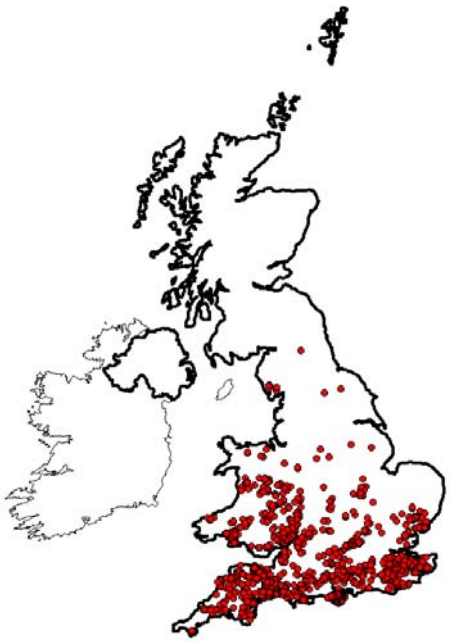
You should be aware that there is the potential for more than one protected species in your woodland, which for example may support dormice and bats, and you will need to follow the good practice guidance for each of the species present.

3. Are dormice present in the woodland?

Assessing the likelihood of the hazel dormouse being present in your woodland involves a number of stages or levels of evidence:

a. Is your woodland within the current known range of the dormouse?

The map below shows the known distribution of the dormouse. You will see that this is a species that is largely restricted to southern England and Wales, but it is often common in the counties in which it does occur. Please note that not all recent occurrences of dormice may be mapped. Some of the more northerly records arise from reintroductions.



Dormouse (*Muscardinus avellanarius).*

Source: Dormouse Conservation Handbook (2006).

b. Are there records of dormice in your woodland?

The National Biodiversity Network (NBN) is available on the web and can be checked for presence of dormouse near or in your woods. The interactive map (www.searchnbn.net/interactive/map.jsp?srchSp=NHMSYS0000080214), can be used to 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 Natural England or County Wildlife Trust representative, is also likely to be able to give site specific information on the likelihood of dormice presence as may the Local Biological Records Centre (www.nfbr.org.uk), local natural history societies and local Mammal Groups (contact details from: www.abdn.ac.uk/mammal/index.shtml).

c. Field evidence of dormice in your wood

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).

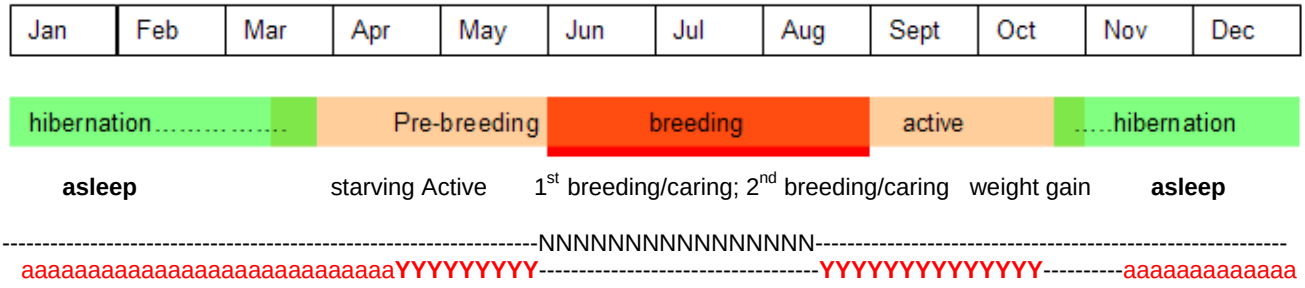
You may wish to consider engaging local specialists, for example, a local mammal group may be interested in carrying out a site visit in your woodlands and this could provide information on dormouse presence. For more information on surveying for dormouse (especially where no hazel occurs, or nest tubes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

In summary, if your woodland:
- is within or close to the known geographic range;
- comprises suitable habitat (see below in Section 4);
- and dormice are known to be present nearby;

then even if you cannot find evidence on site it may be safest to assume they are present.

If by self-assessment (following the guidance above) and/or specialist survey you are confident that dormice are not present then no further action is necessary and the operation may proceed. It would be sensible to keep a record of your decision and the information used to reach it. If evidence of dormice is subsequently discovered during operations (especially active nests), you should stop work, consult the FC and review your plans as required. It is therefore important for operators to remain vigilant for signs of dormice while undertaking work in woods where they might just be found.

Figure 1. Calendar of dormouse activities during the year
*Below the Calendar are descriptors of activities, "**N**" indicate window when operations will have most impact and "**Y**" least impact and "a" as alternative if necessary. Use in conjunction with habitat information in Table 1*



4. What woodland habitats do dormice use?

Dormice are usually active from late March to the end of October, living in the shrub layer, but also feeding higher in the canopy. Their food changes seasonally and is taken from a wide variety of trees and shrubs, and includes flowers, shoots, insects and fruits/seeds. The typical dormouse year is given in the calendar. A particularly early or late spring or winter will normally mean dormice are active several weeks earlier or later respectively. More southerly populations will generally be active for longer in a given year than northern ones.

Dormice are most frequently found in broadleaved woodland, with either a thicket coppice structure or over-mature woodland with a good understorey. However, they are sometimes found in mixed conifer plantations, especially those on ancient woodland sites [PAWS]. They may also be present in ride edges and shrubby glades, in scrub and thick hedgerows connected to woodland, and temporarily open areas within plantations. Some of the most favoured habitats are coppiced woodland and thicket-stage mixed plantations prior to canopy

closure (5-15 years). Larger woods with contiguous areas/ compartments/ coupes with different ages and types of woodland structure are particularly suitable. The features which particularly suit dormice are summarised in Table 1. Woods with an abundance of the favourable features are more likely to contain dormice, and are also likely to have higher populations and densities.

The dormouse is a species that can benefit from positive woodland management. Leaving a woodland unthinned, or coppice uncut, eventually reduces the understorey and the quality of the habitat for dormice. Although woodland operations can cause short-term disturbance, maintaining a continuity and diversity of suitable habitat is necessary to sustain thriving dormouse populations over time.

Table 1.

Favourable habitat features	Unfavourable features
• Woods that are connected to other areas of suitable woodland. • 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 scrub on woodland margins, ridesides or in patches • Canopy connections across tracks or thick, wide hedgerow connections to other nearby suitable habitat • Conifer/broadleaved mixtures or conifer plantations colonised by native broadleaves • Fruiting hazel or sweet chestnut – ideally as managed coppice.	• Small isolated wood or adjacent only to an older 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 large coupes relative to the woodland area • Absence of large fruiting trees • Plantations lacking any native broadleaved trees and shrubs ie. 'cleaned' conifers • Crops from which all nurse conifers have been removed in one operation • Sites above 300m altitude • Short rotation (<7 yrs) coppice in cycle.

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

5. What activities and operations could cause damage, disturbance or harm?

Although dormice will be at higher densities in the most favoured habitats, both their hibernation and breeding nests may be distributed throughout a woodland area. As such, any mechanised operations – such as timber harvesting, coppicing, scarifying, ride swiping or mowing and ground-works - within the woodland are at risk of harming or disturbing individuals or damaging their nests – and therefore potentially result in an offence being committed. In simple terms, if you are considering using any machine within a woodland with dormice, then you will need to think carefully.

The level of risk will depend on several factors:

- **Scale of operation:** to coppice or fell the majority of the habitat within a woodland constitutes a significant risk to the population, whereas if you only work a small proportion of the area there is a much lower impact.
- **Scale of woodland unit**: a small wood (less than 10ha) is less robust to woodland management operations when compared to a large woodland unit or a series of well connected small woods (greater than 10ha). This is because small dormouse populations are at risk of extinction if there are consecutive poor breeding years.
- **Intensity of operation:** in the short-term clearfelling effectively removes the habitat needed by dormice, whereas thinning activities can have a much lower impact. In winter, extraction of timber by skidder is likely to cause greater ground damage to hibernation nests than via forwarder movements, and so has a higher risk of causing damage or harm.
- **The nature of the habitat:** a dense plantation of conifer with no broadleaved component in the canopy and a sparse understorey will contain a limited number of dormice compared to a stand of regenerating broadleaves (5-15 years old). Similarly, scarification of a clearfell site the same year as the felling took place represents a low risk to dormice, whereas scarification 3 years hence would potentially be a much higher risk because of the area would have become ideal dormice habitat.
- **Time of year:** the most sensitive periods for dormice (and therefore greatest risk of causing damage, disturbance or harm) is between June and mid-August when breeding, and through the winter hibernation period when they are vulnerable in nests on the woodland floor (see Figure 1). The April-May period where operations would cause least impact to dormice however coincides with the peak nesting period for woodland birds when disturbance should be avoided in bird-rich areas. Whilst young actively worked coppice is generally bird and dormouse rich note that neglected overstood coppice can be poor for both dormouse and birds.

6. Good practice guidance for woodlands with dormice

The overall outcome of management should be a mosaic of suitable habitats, which are inter-connected and will provide a continuity of habitats over time. A key principle is to leave some areas of the woodland unit undisturbed to act as reserves or ‘refugia’ from which the population can recolonise the worked areas as they become more suitable. Take into account that the woodland unit used by the dormice population may extend beyond the area of woodland you are managing.

Good practice for managing woodland with dormice

This good practice guidance for routine woodland operations should maintain or improve the habitat for dormice and minimises the risk of harming individuals or damaging their breeding sites or resting places. If you follow this good practice, and carry out the operations as described here, we would not expect you to require a protected species licence.

- **Harvesting** – in favourable habitat for dormice (see Table 1) avoid any harvesting operations from early June to mid-August to ensure breeding animals are not disturbed. The recommended time of year to work in favourable habitat is in the autumn and the scale of any proposed operations must recognise the sensitivity of this habitat for dormice. In more marginal habitat, containing a mix of favourable and unfavourable features, which may contain much lower densities of dormice, any harvesting operations between June and mid-August should be restricted to 10% of the area of marginal habitat available. Outside of the breeding period follow the felling and thinning guide as outlined below. In unfavourable habitat for dormice (i.e. only unfavourable features in Table 1), harvesting can proceed at any time of year, unless there is obvious evidence that dormice are present.
- **Felling** - Avoid felling more than a third of the area of habitat in the woodland, less for small woods, and retain remaining areas of habitat for at least 5 years. Follow the seasonal timing guidance given in Figure 1 above.
- **Thinning** - Do not thin more than two-thirds of the area of suitable habitat in one year and leave the remaining undisturbed for several years. Follow the seasonal timing guidance given in Figure 1 above.
- **Extraction** – where possible extract material using a forwarder rather than a skidder to reduce the risk of damaging nests on or near the ground.
- **Coppicing** - ensure coppicing is undertaken while dormice are hibernating (November – early March). Coppice no more than 25% of the area of habitat in any one year, and ideally less. Avoid unnecessary disturbance of the ground, where dormice may be hibernating.
- **Site preparation** – try to avoid scarification or burning up of brash, but if it is necessary, ensure all site preparation is done before the area becomes suitable habitat – ideally within a few months of felling.
- **Mowing and swiping regimes** – to limit the risk only mow areas of existing short vegetation; restrict swiping to the early autumn.
- **Scrub cutting** - If rideside and other scrub does have to be cut then aim to do this in winter and only treat a small proportion of the area in any one year. Maintain branch connectivity at intervals over rides and tracks.
- **Track construction or other ground-works** –avoid undertaking such activities during June – August and, where possible, take routes around areas of highest quality habitat.

7. When and how should I seek a licence?

Carrying out any operations that 'exceed' the thresholds or do not comply with the good practice guidance above constitute an offence or carry a significant risk of committing an offence. Some possible examples are:

- Any harvesting in prime dormice breeding habitat between early June and mid-August.
- Felling over a third of the area of habitat or thinning more than two-thirds.
- A significant change in the management of rideside vegetation or extensive cutting of scrub.
- Site preparation of an area that has developed abundant suitable shrub vegetation
- Construction of a forest track through an area of prime dormice habitat.

Activities that fall outwith the guidance, but could cause such damage or disturbance would also necessitate an application for a licence. These might include:

- Removing the woodland and restoration to open habitat.
- Intensive recreational activities which will disturb within an area of prime breeding or hibernating habitat during these sensitive periods.

You can apply for a protected species licence to carry out such operations, but your application will have to be able to demonstrate that it meets all of the following three 'tests':

- The work is being done in order to conserve wildlife, ensure public safety or to help deliver the Government's woodland strategy and provide public benefits;
- There is no satisfactory alternative way of achieving the same outcome; and
- The overall package of work will not be detrimental to the population of dormice.

An application form can be obtained from your local FC office. This will guide you through the process and the information you need to provide. To meet the third 'test' you may have to carry out additional work to improve the habitat and 'compensate' for any short-term adverse impacts on the dormice. The FC will carry out initial checks but NE will make the ultimate decision and grant the licence.

If the package of work you are proposing does not meet these 'tests' then it will not be possible to grant a licence. You are strongly advised not to proceed with operations that involve a high risk of committing an offence without a licence.

8. What else can I do to help conserve dormice?

The following operations should improve your woodland for dormice and some of these are likely to be essential if you are applying for a licence:

- Work to improve connections between areas of habitat within the woodland unit by developing a network of connecting strips/belts of scrub or retaining and promoting canopy contact ('pinch-points' or 'bridges') over rides.
- Creating a network of woodland habitat across the landscape, linking isolated woodland by creating new woodland and dense hedges.
- Enhance the shrub layer and understorey by coppicing, thinning or group felling to open up canopy gaps and promote woodland regeneration.
- Control or exclude livestock or deer to ensure adequate understorey and ground vegetation.
- Favouring any broadleaves when thinning stands of conifer.

It is possible that grant aid may be available under the England Woodland Grant Scheme to support such work to further the conservation of dormice.

Sources of further information and references

Anon (2007) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC*, European Commission, February 2007, available at: http://forum.europa.eu.int/Public/irc/env/species_protection/library?l=/commission_guidance/final-completepdf/_EN_1.0_&a=d

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