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Micro guide to surveying for bats in trees and woodland

An introduction to BS 8596 for non-specialists

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Introduction

Involved in the management of woodland or the maintenance of trees?

If you are, you should be aware that bats and their roosts are legally protected and consider how this affects your operations.

So that you can take appropriate steps to prevent the disturbance of bats or damage and destruction of roosts, you will need to survey your trees and know what to look for that indicates the presence of bats and their roosts.

This micro guide is designed to help non-specialists undertake surveys for bats, whether in individual trees, small copses, woodland or forest. These could be trees in gardens and urban settings, within a farmed landscape, or in parkland. In woodlands, the surveys might support forestry management or conservation projects.

This micro guide does not cover development, for which a specialist survey is necessary. Guidance on specialist surveys is given in BS 8596.

Who we are

British Standards Institution (BSI) is the UK's National Standards Body. We produce world-leading standards that benefit UK society. Every BSI standard is the result of a highly rigorous process which captures the knowledge, understanding and experience of a wide range of specialist stakeholders and contributing experts.

This micro guide is based on standard BS 8596, Surveying for bats in trees and woodland. The standard contains additional advice and information on each of the steps outlined in this micro guide. To purchase the full standard, please visit

shop.bsigroup.com/bs8596

Step 1 Understanding bat behaviour

Surveying trees and woodland for bats requires some understanding of the bat species found in the UK, their general habitat requirements and the more specific needs of some species. A brief, preliminary assessment should be made to ascertain whether the site has the potential to support roosting and/or foraging bats. This assessment can be made without extensive training or qualification.

A preliminary assessment should take account of the age of the tree(s). Young plantations, for example, are unlikely to have features suitable for bat roosts although they might still be used for foraging.

UK bats have adapted to feed in various types of woodland surrounding. Cluttered woodland interiors will support slow-flying species, and open areas and woodland edges favour species with a faster flight. Certain bat species are reliant entirely on woodland, moving between roosts within different trees and also feeding within woodland.

Bats prefer to avoid open areas, instead using features such as hedgerows, rivers and woodland, as these offer them protection from predators. Where such features exist in proximity to the trees being surveyed there is a greater potential for bat use, including roosts.

For a full listing of UK bat species got to:
www.bats.org.uk/pages/ukbats.html

Step 2 The scoping survey for roosts

Individual trees and groups of trees

A scoping survey should be used to assess a tree or group of trees for the presence of potential roost features (PRFs) prior to work being undertaken. The scoping survey can be performed by anyone who has received basic bat awareness training, and would usually be undertaken by the contractor engaged to complete the tree work.

The findings of the scoping survey should be recorded even if no PRFs are seen. Trees should be classified according to their risk of bat roost presence as set out in the table below, and action taken accordingly.

- For trees with no potential to support bats, or with no obvious PRFs, no further action is needed.
- For trees with PRFs a secondary assessment can be undertaken by non-specialists to examine the PRFs identified. If roosts cannot reasonably be ruled out, a bat specialist should be consulted (see Step 3).

Classification of trees for risk of bat roost presence

Tree category and description (following scoping survey)	Secondary (non-specialist) survey recommendations	Secondary (specialist) survey recommendations
Known or confirmed roost	Initially consider if work to tree(s) can be avoided. If not, a specialist bat roost assessment should be undertaken to establish bat species, numbers and the nature of the roost.	
High/medium risk Trees with a suitable potential roost feature, or with several features with some bat roost potential.	• Secondary (non-specialist) assessment to examine potential roost features previously identified. If roosts cannot reasonably be ruled out a bat specialist should be consulted. • Following this assessment the tree could be up-graded or down-graded. (see column 1 categories)	• Specialist bat roost assessment should be undertaken if work to a tree cannot be avoided. • Assessment to include techniques such as endoscope use and dusk/pre-dawn surveys should be undertaken. • Following this assessment the tree could be up-graded or down-graded.
Low risk Trees of sufficient size and age to contain bat roosts but with no obvious potential roost features seen during the scoping survey, or features seen with limited roosting potential only, e.g., small amounts of ivy.	No further assessment is required unless sufficient new evidence is found to upgrade the category	None
Negligible/no risk Trees with low or no potential to support bats.		

NOTE Risk equates to the likelihood of bat roost presence.

Woodland

Woodland scoping surveys should ideally be undertaken in winter when the leaves are off the trees and it is easier to observe PRFs. The scoping survey should be undertaken to determine the likelihood of bat roosts being present and priority should be given to woodland stands where work is potentially required within the next five years. Planning ahead will avoid delays caused by late discovery of bats.

For woodland, a desk study is a useful precursor to a daytime field walkover survey, but is not essential. A desk study should help you determine the level of walkover survey required, Maps, aerial images and historical surveys can all be used in completing the desk survey.

As with individual trees and groups of trees, the scoping survey for woodland should be undertaken to assess the presence of PRFs. Again, the findings of the scoping survey should be recorded, even if no PRFs are seen. If you are managing forests or woodland you should ensure staff are trained to a basic level of bat awareness, and maintain training records.

If no PRFs are identified by the scoping survey in the area that would be affected by the planned work, no further action is needed. Where PRFs that would be affected are identified by the scoping survey, then a secondary assessment should be carried out, which can be undertaken by non-specialists, to examine the PRFs identified. If roosts cannot reasonably be ruled out or are confirmed during the secondary survey, then further surveys should be undertaken by a bat specialist if the PRF or roost will be impacted by the proposed work. Any works that would impact a confirmed roost will require the issue of a European Protected Species Licence by Natural England; Natural Resources Wales; Scottish Natural Heritage, or the Northern Ireland Environment Agency.

Potential roosting features (PRFs) of trees for bats

- Knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar
- Man-made holes (e.g. cavities that have developed from flush cuts) or cavities created by branches tearing out from parent stems
- Woodpecker holes
- Cracks/splits in stems or branches (both vertical and horizontal)
- Partially detached platey bark
- Cankers (caused by localized bark death) in which cavities have developed
- Other hollows or cavities, including butt-rots
- Compression forks with included bark forming potential cavities
- Crossing stems or branches with suitable space between for roosting
- Ivy stems with diameters in excess of 50 mm with suitable roosting space behind, or where a roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk
- Bird and bat boxes on trees
- Other features that offer a place of shelter

Step 3 Secondary non-specialist survey for roosts

Individual trees and groups of trees

Where a secondary non-specialist survey is needed, each PRF identified during the scoping survey should be examined closely. Indicators of roosting will be primary signs of bat use, and occasional signs of bat presence (see the table below). Accessing PRFs at height may necessitate the use of rope access techniques, a ladder, or of a mobile elevating work platform. You will need to ensure that you comply with the Work at Height (Amendment) Regulations 2007 and the Lifting Operations and Lifting Equipment Regulations 1998. The use of artificial light (e.g., torch light) and endoscopes can disturb bats and are therefore licensable activities in known bat roosts. If an endoscope is being used by an unlicensed but appropriately trained individual it should only be used to rule out PRFs. This would only be necessary where other survey methods (use of binoculars, torches and mirrors) have been exhausted and no evidence (such as droppings and staining) has been observed. The Bat Conservation Trust's *Method statement for the appropriate use of endoscopes by arborists* gives further guidance on endoscopes.

This secondary non-specialist assessment should be undertaken only by people who have received basic bat awareness training.

The results of the secondary non-specialist survey should be recorded for each relevant tree. The tree category recorded in the scoping survey at Step 2 should be reassessed. Trees with known or confirmed roosts, or with PRFs that could not reasonably be ruled out or examined to the satisfaction of the surveyor, should be subject to a specialist bat roost survey.

Woodland

The recommendations given in the previous section for individual trees and groups of trees relating to surveying PRFs at height apply equally in woodland.

Visual assessment of PRFs can be supplemented by listening for bats' audible social chatter within the roost and by the use of bat detectors at dusk emergence or dawn return.

Forestry or woodland managers should ensure that staff have received basic bat awareness training and training records should be kept.

All trees containing identified roosts should be marked on a plan of suitable scale to enable re-identification, and records should include details of the tree and nature of the PRF.

If roosts cannot reasonably be ruled out or are confirmed during the secondary survey, then further surveys should be undertaken by a bat specialist if the PRF or roost will be impacted by the proposed work. Any works that would impact a confirmed roost will require the issue of a European Protected Species Licence by Natural England, Natural Resources Wales, Scottish Natural Heritage, or the Northern Ireland Environment Agency.

Primary signs of bat use	Occasional signs of bat presence
The presence of bats (live or dead)	Staining immediately around the potential entry point
Open cavities which extend above the opening, and have sections that are smooth and free of debris	Smoothing of surfaces around the potential entry point
Bat droppings in, around or below the entrance	The distinctive smell of bats or ammonia
	Audible chattering at dusk or in warm weather
	Accumulation of prey debris such as insect wings

Step 4 Scoping survey for foraging and commuting

Groups of trees and woodland

The aim of this survey is to ascertain the value to bats of trees and woodland for foraging and commuting potential. This survey is required where intended management works might impact this use by bats.

A desk study should be undertaken first, with the aim of gathering as much information and data as possible on the use of the site by bats. Your aim should be to identify the species of bat that have distribution ranges that include the survey site.

The desk study should be followed by a systematic walkover, to assess the features that are most likely to support foraging and commuting.

This scoping survey should be completed by those who have received basic bat awareness training and who, preferably, are familiar with the group of trees or woodland.

The rarity of barbastelle and Bechstein's bat species and their recognized dependence on woodland should be taken into account. If the operations being carried out are likely to result in long-lasting or severe impacts (such as in the permanent loss of woodland habitat), then a more thorough survey should be undertaken by a bat specialist.

If the findings of this non-specialist survey provide sufficient evidence that there is poor potential for bat foraging or commuting, then no further survey effort is required.

Other considerations

Bats found during tree work operations

Bat roosts in trees can be difficult to find and there might be occasions when they are discovered after tree work has commenced, even though the correct pre-start roost assessment procedure has been followed.

In the event that bats or bat roosts are discovered during tree work operations, work should cease immediately or as soon as it is safe to do so, with the least possible further disturbance to the tree. The relevant SNCO and a licensed bat worker should be contacted as soon as possible, and the tree work should not recommence without the approval of the bat worker and the acquisition of any licence that might on their advice be required.

If the work results in live bats being discovered loose on the ground they should be placed in a well-ventilated dark container or box pending arrival of the bat worker, and fresh water should be provided in a shallow container such as a jam jar lid. Bats should never be handled with bare hands, and clean gloves should be worn while moving them to the container.

Emergency procedures

If a tree containing a roost, or likely to contain a roost, poses a serious and immediate threat to public safety, as assessed by an arboriculturist, and the risk of harm being caused cannot be adequately reduced by other means (such as fencing), the SNCO and/or a bat specialist should be contacted prior to work commencing or immediately following tree work if time doesn't permit. Work to such a tree without a licence is only justifiable in these exceptional circumstances and detailed records should be made describing the tree's condition, why emergency work was necessary, and details of the roost or bats seen. In these circumstances mitigation measures should be undertaken (if safe to do so), such as the careful lowering of timber containing a roost at the same angle as that at which it was growing.

The next steps

This micro guide should give you an understanding of what you need to do to consider the presence of bats and their roosts, Detailed guidance, including that for the specialist surveys, is available in the complete version of BS 8596, Surveying for bats in trees and woodland.

If roosts cannot reasonably be ruled out following a non-specialist secondary survey, then further surveys should be undertaken by a bat specialist if work is proposed to the tree.

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Applicable legislation

Legislation on the protection of bats and their roosts

England & Wales	Scotland	Northern Ireland
Wildlife and Countryside Act 1981 (as amended) Conservation of Habitats and Species Regulations 2010 (commonly referred to as 'Habitat Regulations') Countryside and Rights of Way Act, 2000 Natural Environment and Rural Communities Act (NERC, 2006)	Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (commonly referred to as the 'Habitats Regulations')	The Conservation (Natural Habitats etc.) Regulations (NI) 1995

Statutory nature conservation organizations (SNCOs)

These are: Natural England, Natural Resources Wales, Northern Ireland Environment Agency, and Scottish Natural Heritage.

Sources of distribution data and local records

Site specific data from any existing woodland estate office records, estate ecological assets plan, aerial photographs and estate workers.

Online sources of distribution data include the National Biodiversity Network **(www.searchnbn.net)**.

Local Biological Record Centres (known as LRCs or BRCs). A list of active LRCs can be found on the National Federation for Biological Recording (NFBR) website **(www.nfbr.org.uk)**.

A Biodiversity or Nature Conservation Officer (also known as county ecologists), who may have access to records, is employed by some local, county or district councils.

Local bat groups usually hold a database of bat records **(www.bats.org.uk)**.

Local wildlife trusts also keep bat records **(www.wildlifetrusts.org)**.

County mammal recorders. These are volunteer recorders who collate records sent to them about mammal sightings in their county. Contact details are available from the Mammal Society website **(www.mammal.org.uk)**.

Local or national mining history or caving groups and clubs and caving councils may have useful information. **(http://british-caving.org.uk)**.

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