

Wider application

Since bats require a range of different roosts, even relatively small bat box schemes can be worthwhile. Bats forage over large areas and often stop to feed even where there are only a few trees between buildings. Whether a wood is large and well-established or small and newly planted, there is scope to attract bats if the habitat is managed to benefit invertebrates and bat boxes are installed as safe roosts.

Further information

National Urban Forestry Unit

This leaflet is one of a series produced by the National Urban Forestry Unit. NUFU is a charitable trust which provides a national focus for the exchange of information and good practice in urban forestry. If you would like further information on other case studies, or if you have examples of good practice to share, please contact:

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The Corporation of London

The Corporation of London owns and manages a number of open spaces, parks and gardens in and around London. Each open space is managed for the enjoyment of the public and for the conservation of wildlife and historic landscapes. A full list of sites and visitor information is available at www.cityoflondon.gov.uk/openspaces.

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The London Bat Group

The London Bat Group is affiliated to the Bat Conservation Trust and works to help conserve bats in and around London through monitoring and database recording, liaising with the public and businesses to create and preserve roosting habitats, and educating the public through talks and guided walks, publicity and training.

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Further reading

Mitchell-Jones AJ & McLeish AP (1999) *The Bat Workers' Manual*. Second edition Joint Nature Conservation Committee, Peterborough

Stebbins RE & Walsh ST (1991) *Bat Boxes*. The Bat Conservation Trust, London

Tuttle MD & Hensley DL (1993) *The Bat House Builder's Handbook*. Bat Conservation International, Austin, Texas

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Urban Forestry in Practice

Providing roosts for bats in urban woodland



Providing roosts for bats in urban woodland

Introduction

All species of British bats are protected by law and many of them roost for part of each year in trees and woodland. Since there is often a shortage of natural roosts in urban woodlands, bat boxes can make a significant difference. This is particularly valuable where grey squirrels are competing for space, and boxes also make the monitoring of bat use easier. Bats are particularly vulnerable to disturbance when they are giving birth (June or July) and during hibernation (October to April). Inspection of boxes must only be carried out under licence, once use has been established.

Bats' roosting requirements vary and research indicates that they change roosts frequently throughout the active period of the year. In the winter, bats hibernate in underground sites or in cool, humid, relatively stable environments within trees and buildings. In spring they move to roosts near good feeding areas, with female bats choosing hotter nursery roosts. Males set up mating roosts in bat boxes and trees in the autumn.

Specific example

Project name and location

HIGHGATE WOOD, LONDON, UK Grid reference TQ 285885

Project partners

- Corporation of London (the landowner and site manager)
- London Bat Group
- London Underground Limited

Project objectives

- To provide bats with valuable roosting places in invertebrate-rich habitats
- To improve understanding of bat box use, in relation to their design and location, by keeping detailed records
- To monitor any changes in the populations and species of bats in the wood

Site description

Highgate Wood is a 28.3 ha ancient oak/hornbeam woodland surrounded by London suburbs, and bordered by extensive playing fields, another ancient broad-leaved woodland and an old railway line. The adjoining railway land supports Natterer's (*Myotis nattereri*) and occasionally brown long-eared bats (*Plecotus auritus*).



The Greenaway and American-style boxes have a front facing entry slit, and tend to be occupied more quickly than those with entry from below

Inspection of bat roosts must only be carried out under licence



Project design and implementation

31 bat boxes have been erected since 1993. They are positioned next to clearings where bats forage for insects, beside paths which act as flight-lines, or amongst trees which have natural bat-roost holes.

The boxes are made from softwood timber painted black with a water-soluble, wildlife-friendly preservative (*Ronseal Fencelife*) to make them more waterproof and heat-retentive. Most are based on the standard Bat Conservation Trust design, but there are two *Tanglewood Wedge* boxes, (developed by the Gwent Bat Group), two *Greenaway* boxes (developed by Frank Greenaway) and five open-bottomed boxes based on a scaled-down version of American-style bat houses. All the boxes have a narrower entrance slit of 10-15 mm as opposed to the recommended 15-20 mm and the box used most heavily by pipistrelles has internal dimensions significantly smaller than those recommended for a standard box.



Positioning is critical. Glades and footpaths provide good insect foraging areas for feeding bats

Results

The 31 boxes in Highgate Wood have been monitored each autumn since 1993 and 16 of them have been utilised. All four box designs have proved successful. It appears best to employ a mixture of bat box sizes and they need to be sheltered, although the orientation does not appear to be crucial. Generally speaking, a male will occupy a roost and then attract one or more females.

Four different bat species have been recorded using the boxes at Highgate Wood: the common or bandit pipistrelle (*Pipistrellus pipistrellus*), which have occupied two boxes, soprano or pygmy pipistrelle (*Pipistrellus pygmaeus*) recorded in twelve boxes, noctule (*Nyctalus noctula*) in two boxes and Leisler's (*Nyctalus leisleri*) in two boxes. Unidentified pipistrelle species have occupied a further five boxes.

During the study period, eight natural roosts were also located, the majority in old woodpecker holes in oak trees. Six were noctule roosts, two were Natterer's roosts, and one housed both species at different times. Bats often seek trees with splits and fungal decay for natural roosts, which may explain the popularity of artificial roosts in wind damaged parts of the wood. At least two natural roosts in trees have been lost during the study period owing to their decay and partial collapse, whilst two of the most successful boxes in Highgate Wood are located close to trees containing natural roosts. This suggests that artificial bat boxes may play an important role as relatively stable roost sites within a dynamic environment.