

# Bats Underground



**This is intended as a guide for all those who might come across bats underground. It explains why bats use underground sites and how those visiting underground sites can support bat conservation by being aware of bats and the issues related to them.**

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## Bats Underground

### Why do bats use caves and underground sites?

Several species of British bat traditionally breed in underground sites and many rely on such places for at least part of their hibernation period. Bats also use these sites temporarily for a variety of purposes, such as for mating roosts or night roosts during feeding or during inclement weather. Two of the rarest British species, greater horseshoe bats and lesser horseshoe bats sometimes breed in underground sites. On autumn nights hundreds of bats can 'swarm' at cave/mine entrances with males competing to attract females and mate.

### Why are bats vulnerable?

Due to a decline in their numbers, all British bats are protected by law. Bats are particularly vulnerable to disturbance whilst breeding; they have only a single young every year, and so disturbing a maternity colony can have a significant adverse impact on the area's bat population. They are also vulnerable during hibernation, as frequent disturbance from torpor leads to a reduced chance of surviving the winter.

### Which bat species are found underground?

Both greater and lesser horseshoe bats use underground sites for hibernating. They also breed in underground sites. Almost all of the other bat species found in the UK are known to hibernate underground.

### Hibernation

All British bats feed on insects and are faced with the problem of surviving the winter, when the number of flying insects is greatly reduced. Therefore bats hibernate, seeking out undisturbed sites with low temperatures. Lowering their body temperature, heart, breathing and metabolic rates greatly reduces their energy requirements and allows them to exist on the body fat reserves laid down prior to hibernation. Many bats also require a humid environment to avoid dehydration, thus underground sites provide ideal conditions for hibernation.

Hibernating bats are unable to move quickly; it may take up to an hour for a bat to become warm enough to be fully active, and once the arousal process is started it is often irreversible. Bats have limited fat reserves to survive the winter period and each arousal uses a considerable amount of energy – possibly enough for ten days hibernation.

Awakenings scheduled by their own internal rhythms or stimulated by natural conditions can be accommodated, but it is not easy to make up weight lost in winter. Any unplanned awakenings, for example by human disturbance, increase the risk of fat reserves running out before the winter is over. With little prospect of replenishing these reserves, the bat may die through starvation or at least fail to recover sufficiently from hibernation to breed successfully.

## Bats and the law

### Wildlife and Countryside Act 1981

All bats are protected by the Wildlife and Countryside Act 1981. It is illegal to intentionally kill or take any bat, to disturb roosting bats; or to damage, destroy or obstruct access to any place used by bats for roosting. Statutory Nature Conservation Organisations (SNCOs) must be consulted over any proposed alteration to a site known to be used by bats, for example by installation of a grille or opening for public access. This also applies to any industrial development that is proposed for the site, such as quarrying or use of a site for mushroom growing for example.

### Countryside and Rights of Way Act 2000

The CROW Act applies only to England and Wales, and importantly adds the word "reckless" to the offence of damaging or destroying a place a bat uses for shelter or rest, or disturbing a bat while using a roost.

### Nature Conservation (Scotland) Act 2004

This legislation makes it an offence to intentionally or recklessly kill, injure or take a bat; damage, disturb or obstruct access to a roost; or to disturb a bat while in its roost.

**Bear the following Conservation Code in mind to stay on the right side of the law:**

- **Do not handle bats.** This is illegal unless you have a bat licence.
  - **Beware of dislodging bats from their roosting position,** particularly when you are moving through low passages.
  - **Flashguns can be very disturbing** – don't use them if bats are present (it is illegal to photograph bats without a licence to do so).
  - **Warming up hibernating bats can cause them to arouse from torpor.** Try not to linger in confined spaces as even your body heat is sufficient to cause arousal.
  - **Do not shine bright lights on bats** as this will cause them to wake from torpor. The use of carbide lamps in bat roosts is particularly undesirable because of the heat and fumes that they produce.
  - **Any strong stimulus can arouse bats so avoid smoking or making excessive noise underground.**
  - **Do not take large parties into bat roosts in winter.** Rescue practices should be avoided when bats are present.
  - **Seek advice before digging or blasting.** Explosives can cause problems both from the blast itself and from the subsequent fumes. Sites used by bats need careful surveying to investigate whether or when certain works should occur. Digging operations may alter the microclimate of bat roosts by altering airflow.
- Remember to consult with your SNCO before undertaking any activities.*

## Conserving bats in underground sites

The formations, archaeology and fauna of underground sites are all part of our national heritage, and all visitors to them should strive to maintain these sites. Always follow the safety and conservation codes published by the caving and mining history organisations and liaise with local groups over access and safety requirements.

Remember also that bats need your help to survive in the winter. Most hibernating bats are very difficult to see – many squeeze into cracks and crevices and only the two species of horseshoe bats normally hang free. Just because you cannot see them does not mean that they are not there! You must seek advice about any activity that might affect bats from the local SNCO.

Those visiting known bat sites for purposes such as recreation are asked to observe the Conservation Code and respect any special restrictions that have been placed on particular important bat sites. Disturbance can be very damaging, so only a limited number of people are licensed to disturb or handle hibernating bats in underground sites, and licences are issued by the SNCO only after training has been given. Such licences are issued for controlled, carefully considered basic survey and monitoring and occasionally for scientific research.

## Site protection

In the past, some sites that would otherwise have been lost to underground explorers were saved because of the presence of bats. Also many sites opened by cavers and underground explorers are now used by bats.

Many sites have been lost through sealing for safety or security purposes. Sealing should be regarded only as a last resort, to be undertaken when other methods of site protection are not possible or permitted. Liaison between interested parties can help preserve and protect such sites. Some underground sites are already protected for either nationally or locally important bat populations and many sites have been protected for other reasons but incorporate bat access. Most sites remain unprotected and, while some will be protected in the future, the majority will rely on the goodwill and common sense of visitors to ensure their continued use by bats.

Site protection for bats normally consists of incorporating a grille into all or part of the entrance, allowing free access for bats but limiting human access. The extent of the grille will depend on the nature of the site and the air flow desirable. Such grilles are usually made of horizontal bars with a 150mm gap and vertical bars spaced at between 450mm and 750mm.

A smaller gap as little as 100mm by 250mm may allow access for bats, but may limit air flow to the extent that the site will not achieve maximum bat potential. This should only be used under extreme circumstances.

### Guidance for those managing underground sites:

- If there is no information on whether bats use a site, a bat survey should be undertaken.
- If a site known to be used by bats is to be grilled, gated or sealed, it is a legal requirement to consult the Statutory Nature Conservation Organisation.
- Grants are available to assist with the provision of grilles or gates suitable for bat access.
- Assume that all underground sites are used by bats. No site should be entirely sealed for protection; adequate access for bats should be incorporated wherever possible.
- Before a site is to be grilled for reasons of bat conservation, access arrangements for other interest groups should be negotiated with the owner and with conservation bodies and the local county archaeologist.
- Minor modification to existing site protection may improve the potential for bats.
- In the protection or preservation of any site, bat conservationists can offer advice, support, and sometimes influence as well as assisting with the physical work.

## For further information

There are now over 90 local bat groups throughout the UK. Specific enquires or information about sites can be addressed to the local bat group, details of which are available from the Bat Conservation Trust or local SNCO (see list below). Licensed bat workers are usually happy to have the company of underground explorers during bat survey and monitoring work, and can demonstrate how inconspicuous bats can be and inform about their biology and conservation.

Lists of membership organisations are available from the National Association of Mining History Organisations and British Caving Association. Subterranea Britannica can often assist with information about other miscellaneous underground sites.

For semi-underground structures such as lime-kilns and disused railway tunnels, the Association for Industrial Archaeology may be able to help.

## Statutory Nature Conservation Organisations

**Natural England**, Northminster House, Peterborough PE1 1UA  
Telephone 0845 600 3078, [www.naturalengland.org.uk](http://www.naturalengland.org.uk)

**Countryside Council for Wales**, Maes Y Ffynnon, Penrhosgarnedd, Bangor, Gwynedd LL57 2DW  
Telephone 01248 385500, [www.ccw.gov.uk](http://www.ccw.gov.uk)

**Scottish Natural Heritage**, 12 Hope Terrace, Edinburgh EH9 2AS  
Telephone 0131 447 4784, [www.snh.org.uk](http://www.snh.org.uk)

**Environment and Heritage Service (N. Ireland)**, Environment Services, Commonwealth House, 35 Castle Street, Belfast BT1 1GU  
Telephone 02890 546 558, [www.ehsni.gov.uk](http://www.ehsni.gov.uk)

## Underground Interest Groups

**British Cave Research Association (BCRA)**, Old Methodist Chapel, Great Hucklow, Buxton, Derbyshire, SK17 8RG [www.bcra.org.uk](http://www.bcra.org.uk)

**British Caving Association (BCA)**, Old Methodist Chapel, Great Hucklow, Buxton, Derbyshire, SK17 8RG [www.british-caving.org.uk](http://www.british-caving.org.uk)

**National Association of Mining History Organisations (NAMHO)**, c/o Peak District Mining Museum, The Pavilion, Matlock Bath, Derbyshire DE4 3NR [www.namho.org](http://www.namho.org)

**Subterranea Britannica**, 14 Maple Close, Sandford, Wareham, Dorset, BH20 7QD [www.subbrit.org.uk](http://www.subbrit.org.uk)

**Association for Industrial Archaeology**  
[www.industrial-archaeology.org.uk](http://www.industrial-archaeology.org.uk)

## The Bat Conservation Trust

15 Cloisters House  
8 Battersea Park Road  
London SW8 4BG

Bat Helpline 0845 1300 228

[www.bats.org.uk](http://www.bats.org.uk)

[email.enquiries@bats.org.uk](mailto:email.enquiries@bats.org.uk)

The Bat Conservation Trust (BCT) is the only national organisation solely devoted to the conservation of bats and their habitats in the UK.

BCT produces a wide range of publications and resources covering all aspects of bats and their conservation.

Join today and help ensure that these fascinating mammals are around for future generations to enjoy.

Registered charity number 1012361

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