



Bats

Do I need a bat survey?

Any development where there is a reasonable likelihood of bats being present and affected by development will require a survey by a suitably experienced and licensed ecologist.

Bats are found in a variety of habitats. They roost in buildings and other man-made structures, as well as in tree cavities, caves, mines and crevices in rock faces. They forage in habitats including woodland, parkland, grassland, along hedges and watercourses, over water-bodies and wetlands and in the open, high up in the sky and also use trees and hedges for commuting between roosts and foraging areas.

Impacts of development may include destruction or damage of roosts and foraging / commuting habitat or direct mortality due to collision with vehicles on roads or wind turbines. In particular, development could potentially affect bats if it:

- involves demolition of a building;
- involves works to a roof, roof space, weather boarding or hanging tiles, e.g., loft conversion, roof raising, extensions;
- involves works to a quarry or built structures such as bridges, viaducts, aqueducts, tunnels, mines, kilns, ice houses, military fortifications, air raid shelters, cellars and similar underground ducts and structures
- involves the development of (a) wind turbine(s), including domestic turbines; or
- will illuminate / cause light spill onto, a church, listed building, woodland, field hedge, pasture, watercourse, water body, tree line or a known bat roost.

If bats are likely to be present in buildings, structures, trees or other features (see above) affected by development, planning authorities will require a report that includes:

- details of roosts/potential roosts where bats are or might be present;
- survey method undertaken to investigate potential presence of bats, including preliminary inspection and, if necessary, dusk emergence and/or pre-dawn re-entry surveys;
- evidence of roosting bats and interpretation and assessment of bat use and value, or confidence in assumed absence;
- the predicted impact that the proposal is likely to have on bats and what can be done by way of mitigation to maintain their favourable conservation status;
- consideration of whether the impact is necessary and acceptable, including consideration of avoidance measures and alternatives; and
- a recommendation on whether a European Protected Species (EPS) licence will be required.

Large developments, infrastructure projects and wind turbine proposals are likely to require bat activity surveys, as well as roost surveys.



Ecology, field signs and survey

Eighteen species of bats are considered resident in Britain. All British bats are nocturnal insectivores and require habitats that support sufficient populations of invertebrate prey.

Buildings are often used for bat breeding during the summer (late April to the end of September). Different parts of a building are used for roosts, including under barge and soffit boards, in the eaves, between roof tiles and felt, in the roof apex, and in cavity walls. Bats tend to tuck themselves into small gaps and crevices and therefore cannot always be seen. Most bats enter their roost through small gaps, sometimes only 2.5cm wide.

Other structures which are used by bats include bridges, tunnels, ruins, caves, mines and other underground structures. In winter, bats hibernate in cool but frost-free places such as buildings, bridges, and caves. It is often difficult to confirm the presence of hibernating bats with certainty. Bridges over water are particularly good hibernacula.

Bats also use trees, roosting in natural splits and cracks, old woodpecker holes, hollow branches and trunks, behind loose bark, under dense ivy cover and amongst roots. Therefore felling, removal of branches and other management of trees may affect bats.

Bat droppings usually provide the best evidence of their presence. Droppings are black/brown and small, about 4 – 8 mm long. Bat droppings crumble into powder when crushed, as they consist of insect remains. In contrast, mouse droppings are sticky when fresh and hard when old. During spring, summer and autumn, the presence of bats can be investigated at dusk and dawn by surveying with bat detectors to watch to see if they fly out of or return to buildings.

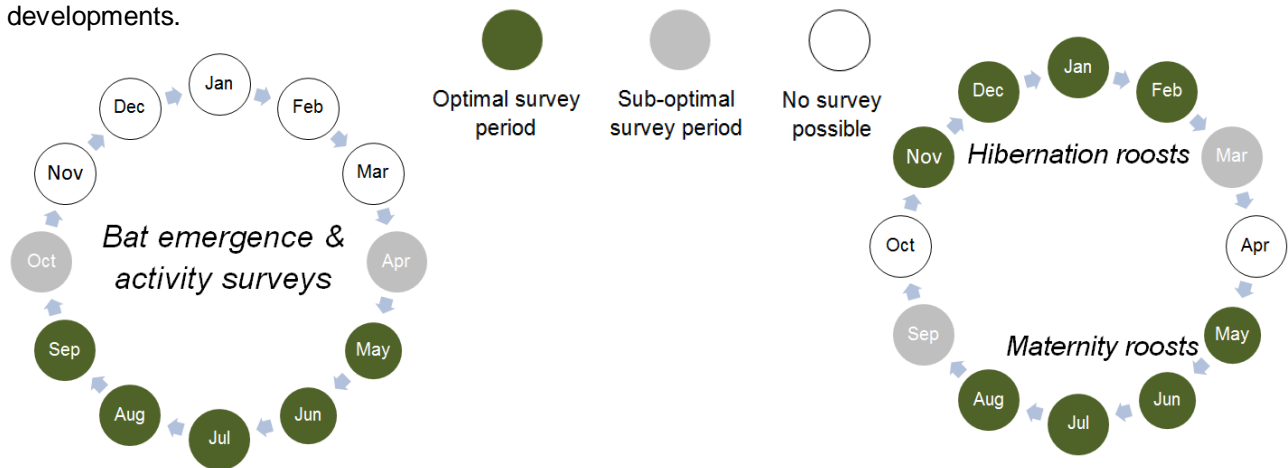
Threats associated with development include:

- roost, foraging and commuting habitat loss, damage and disturbance, including direct and indirect effects, such as lighting;
- habitat fragmentation and severance; including loss, damage or severance of hedgerows; and
- mortality due to collision with traffic on new roads and with wind turbine blades.

Survey of buildings and trees for bats normally begins with a daytime inspection for signs, such as droppings, and any bats present. This can be undertaken at any time of year. When surveying trees, a survey from the ground is undertaken using binoculars to look for suitable cavities that bats might roost in. This is best undertaken in winter when there are no leaves on the trees. This may be followed up with a climbing survey to inspect cavities with a torch/endoscope and/or emergence surveys, as follows.

Should there be potential for bats to roost in areas that cannot be visually inspected, or if there are signs of bats that require further investigation in order to assess usage by bats and importance of the roost, further bat activity survey is usually required. This involves either/or a combination of dusk emergence surveys and pre-dawn re-entry surveys to observe any bats leaving or returning to roost. Natural England Standing Advice recommends 2 to 3 surveys spread between May and mid-October, with the optimal period being May to August. Best practice is to spread surveys evenly through the optimum

period. Note that a dusk survey followed by a dawn survey counts as one survey only. It may also be necessary to undertake DNA analysis of bat droppings to determine which species are present, if the bats are not seen on survey visits. The Bat Conservation Trust 'Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition' provides more detailed information on the need for survey, types of survey, timing and effort required, including for major infrastructure projects and onshore wind turbine developments.



Legislation and licensing

Bats and their roosts are protected under the [Conservation of Habitats and Species Regulations 2010 \(as amended\)](#), the [Wildlife and Countryside Act 1981 \(as amended\)](#), and are a [European Protected Species \(EPS\)](#). It is an offence *inter alia* to:

- Deliberately capture, injure, kill, or disturb bats;
- Intentionally or recklessly obstruct access to their roosts; or
- Damage or destroy a roost.

Roosts are protected even if no bats are present.

The Regulations contain provision to permit, by means of a licence, certain activities that would otherwise be prohibited. A scientific 'disturbance' licence is required to carry out roost inspection surveys due to the possibility of bats being disturbed. It is therefore important to use a suitably experienced and licensed ecologist. Richard Green Ecology Ltd is experienced in undertaking bat surveys using suitably licensed surveyors.

Activities likely to result in disturbance or killing of bats or damage to their roosts will usually require a 'development licence' from Natural England. In order to obtain a licence it must be demonstrated that:

- the project is for the purpose of preserving public health or public safety or other reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
- there is no satisfactory alternative; and
- the action will not be detrimental to the population of the species.



Some bat species are also [UK](#) and County (BAP) species, which identify them as a priority for conservation. Planning authorities must have regard to their conservation in fulfilling their duty under the [Natural Environment and Rural Communities \(NERC\) Act 2006](#).

Before making an EPS development licence application, planning permission will need to have been granted and sufficient and current survey data must be gathered. Avoidance measures and mitigation (see below) should be undertaken to reduce impacts on bats and avoid the need for a licence where possible. Such measures will be also required as a condition of a licence.

Avoidance and mitigation measures

Mitigation measures need to be proportionate, depending on the habitats and numbers of bats affected, e.g., type of roost. Most preferable is avoiding any impacts on bats or their roosts. Options may include:

Avoidance

- designing the scheme to avoid or minimise loss or severance of habitat; and
- timing of maintenance work to avoid times when bats are present to avoid disturbance.

Mitigation

This may be required in advance of development commencing, and may involve:

- providing replacement bat roosts of equal or greater function and value;
- planting of new areas of woodland, hedgerows and shrubs to provide commuting and foraging habitat;
- managing existing habitats to improve them for bats; and
- monitoring of bat population following the work;

For more detailed information on mitigation techniques please refer to the Bat Mitigation Guidelines.

Where should I go for further information?

- Bat Mitigation Guidelines (English Nature 2006)
- Bat Conservation Trust. [Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition](#)
- Natural England (2012) Standing Advice Species Sheet: Bats
- Natural England – EPS Licensing

Important note

Legislation, survey guidelines, species distribution and best practice mitigation may be subject to change and this note may not necessarily include the latest information. It is therefore recommended that other sources of information be consulted or professional advice sought as necessary.