

Survey and monitoring:

- Informs on the relative value of areas for bats, aiding identification of sites for special protection.
- Provides knowledge of the status and distribution of species.
- Aids planning and the process of Environmental Assessment.
- Increases our understanding of the ecology of bats and their relation to the environment.
- Informs and guides policy as to land and woodland management.

Most surveys to date have 3 main aims regardless of scale;

- Inventory and distribution study,
- Location of key sites and feeding areas,
- Monitoring the status of sites and populations.

No single survey or monitoring technique for bats is currently considered complete or to give an unbiased picture of population distribution. Most techniques are selective. Surveys are generally directly linked to the requirement or aim of a project

Bats and their environment are protected by relatively strong legislation.

Requirements for qualified surveyors are stringent and licenses for Bat workers are granted by DEFRA. Any activity that may affect a bat or its roost should be notified to the appropriate Statutory Nature Conservation Organisation (SNCO).

Bat Survey Techniques

References

- Hill, D.A., Greenaway F. (2008) Conservation of Bats in British Woodlands. British Wildlife, Bat Conservation Trust (2006) The National Bat Monitoring Programme Annual Report 2006. JNCC, Peterborough
- Hill, D.A. & Greenaway, F. (2006) Effectiveness of an acoustic lure for surveying bats in British woodlands. Mammal Review 35(1): 116-122
- Macdonald and Baker. (2005) The State of Britain's Mammals. People's Trust for Endangered Species/Mammals Trust UK, 2005.
- Anon (2005) Woodland Management for Bats. Forestry Commission England, Forestry Commission Wales, Bat Conservation Trust, Countryside Council for Wales and English Nature
- Mitchell-Jones & McLeish. (2004) Bat Workers Manual, 3rd Edition. JNCC

Transect Surveys with echolocation

A traditional method of survey for bats involves walking a set route, at a set time and day to record bats using echolocation. If a detector is used that can record different frequencies at the same time the different type of species within the area can be established. This type of survey is generally carried out between May and September. It is a relatively quick technique requiring minimum experience that can be carried out in most environments. The transects are preset and generally bisect varying habitats. Currently such data is collected on a national level to interpret the general overall bat populace.

The survey is dependent upon echolocation and, for the more experienced, on field identification. Not all species can be identified reliably from their echolocation calls and experience of using a bat detector and of the habitat and forage techniques of the species will often be required. Species with weak echolocation calls tend to be under-recorded.

Emergent Survey

If a communal roost site is already identified individuals can be counted as they emerge. This is a common method that does not require training or understanding of equipment.

Such surveys are between May & early September (June-August most reliable) in suitable weather conditions. These counts can be carried out several times in a season and in successive years to monitor numbers of a particular colony.

This maybe useful to determine numbers in relation to known or suspected local variables such climate, changes in landscape or land use.

Day surveys of potential roosts

Generally carried out to buildings all year round and to trees mainly in winter. Each potential entry point is examined for signs indicative of use by bats such as urine streaking, grease marks and droppings, moth wings, and dead bats.

Static Monitoring and Surveying

Sophisticated detectors such as the the Anabat have been evolved to identify and digitally record bat activity within a given area over a period of time. This can record the species of bats with no intervention for up to several years

Hibernacula surveying

Surveys of the winter roost/ hibernation site or hibernacula allows identification and number of species to be recorded. Such surveys are generally carried out on cave hibernating species because disruption can be kept to a minimum. Only licensed bat surveyors can enter sites known to be roosts.

'Autobat' capture and Radio tagging

Surveys of bats within woodland habitat are notoriously difficult. Woodland species tend to have a quieter echolocation and several species use calls that are very similar in structure making identification difficult. Tree and vegetation roosts are harder to identify for emergent surveys, bats may have several different roost sites which they may use throughout the active season. Visual inspection for tree roosts in woods is often unfeasible.

Historically bat boxes have been used as a tool to monitor activity in woodlands but the substitute habitats are not always favourable and maybe seen as influencing behaviour.

Catching bats enables species identification as well as providing information on the sexual community and reproductive condition. Bat capture with mist-nets alone tends to catch those species that fly low or close to vegetation.

'Autobat' is a system which plays social calls to lure bats into mist nets or harp traps. This has been shown not to be exclusive to predicted flight patterns. Once the bat is caught they maybe radio tagged to give accurate record of forage area and reveal the type of roost sites that are being used.

