Technical Guidance Series

CIEEM Chartered Institute of Ecology and Environmental Management

In association with Bat Conservation Trust

Competencies for Species Survey: Bats

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1. Introduction

This guidance has been written in association with the Bat Conservation Trust (BCT) and the competencies outlined in section 4 have been taken from level one of BCT's Professional Training Standards which set out the skills and knowledge required to independently and competently undertake professional surveys involving bats.

The purpose of this document is to set out the knowledge, skills and experience required to survey, disturb or to carry out research works (hereinafter referred to generically as 'survey') for bats, order Chiroptera, in a professional capacity. To be undertaking such work, CIEEM would consider attainment of the criteria outlined in this guidance to be a minimum standard for an individual to competently survey for bats. The Institute aims to drive up standards in the ecological profession for the benefit not only of ecologists but also of the public.

This document does not provide guidance on the techniques to be employed in carrying out survey activities: references to published sources of guidance on survey methods are listed in Section 5.

2. Status

Bats are present across the UK and the Republic of Ireland, with 18 species of bat resident in the UK (of which 17 are known to breed) and 10 species resident in Ireland. Bat populations are threatened by loss and fragmentation of natural hedgerow, woodland and pond habitat, loss of food due to pesticide use and intensive agriculture, and building and development work affecting roosts. Populations declined throughout the 20th century and are still threatened into the 21st century. The barbastelle, soprano pipistrelle, greater horseshoe, lesser horseshoe, Bechstein's, brown long-eared and noctule bats are all UK Biodiversity Action Plan species.

3. Legislation and Licensing

Legislation

Bats are protected under the following legislation. This outline of legislation is not comprehensive and the appropriate legislation should always be consulted for a definitive list of offences.

COUNTRY	LEGISLATION GIVING PROTECTION	SCHEDULE OR ANNEX LISTING
England	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended)	Schedule 2 Schedules 5 & 6
Wales	Conservation of Habitats and Species Regulations 2010 Wildlife and Countryside Act 1981 (as amended)	Schedule 2 Schedules 5 & 6
Scotland	Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)	Schedule 2
Northern Ireland	Conservation (Natural Habitats etc) Regulations (Northern Ireland) 1995 (as amended) Wildlife (Northern Ireland) Order 1985	Schedule 2 Schedule 6
Republic of Ireland	European Communities (Natural Habitats) Regulations 1997 (as amended) Wildlife Act 1976 (as amended)	First schedule Schedule 5

Licensing

The following Statutory Nature Conservation Organisations (SNCOs) are responsible for issuing licences to permit actions that would otherwise be illegal under the relevant legislation:

COUNTRY	SNCO
England	Natural England
Wales	Natural Resources Wales
Scotland	Scottish Natural Heritage
Northern Ireland	Northern Ireland Environment Agency
Republic of Ireland	National Parks & Wildlife Service

A *survey licence is required:* for a surveyor to undertake activities during survey work that would violate the protection afforded to bats. A personal licence is required to permit such activities, for example, entry into a bat roost or temporary disturbance of bats during the survey. Licences for more invasive survey methods, such as mist netting, marking and radio-tracking, are usually issued for specific projects requiring their use.

It is best practice for surveys of potential roosts to be undertaken by licensed surveyors; if a roost is discovered and needs to be entered, a personal licence is required as bats may be deliberately disturbed. On discovering a roost in a previously unknown location, an unlicensed bat worker must withdraw.

A *survey licence is not required*: for activities such as undertaking activity surveys using bat detectors in the field or emergence surveys outside roosts, as these do not cause disturbance to bats when undertaken properly.

It is the role of the appropriate licensing authority to define the criteria for issuing such licences as may be required for survey work, therefore, attainment of the skills set out is no guarantee that a licence will be obtained; other criteria will need to be considered.

4. Knowledge, Skills and Experience

To independently and competently undertake professional surveys involving bats, an individual would be expected to possess the following knowledge, skills and experience.

A surveyor needs to recognise their level of attainment along a continuum. Those without the breadth and depth of the knowledge, skills and experience that CIEEM consider a minimum, should always work with, or seek advice from, an adequately experienced individual. For instance, not holding a licence to disturb bats or having limited experience in identifying droppings of a range of bat species may compromise a survey and/or may mean that a licensed and more experienced surveyor needs to undertake a follow-up survey.

Knowledge

Individuals should have a sound knowledge and understanding of:

a. legal protection (and limits to protection) afforded to bats and the implications of bats' protected status for surveys;
b. licensing and permissions required for different species of bats;
c. species status, range, conservation and threats at the local, regional and national level
d. life cycle of a bat including breeding and social behaviour, as well as feeding strategies used by different bat species
e. physiology of British and Irish bats (including adaptations to flight, echolocation, torpor, hibernation and energetics);
f. species-specific and seasonal requirements of roosting bats and the various natural features and manmade structures used for roosting
g. the range of survey methods that can be used to identify and study bats, and their strengths, weaknesses and limitations;
h. the current relevant guidance for surveying bats;
i. seasonality and conditions and how these might affect surveys;
j. how bats are considered in the planning process, and the level of information required for this
k. health and safety issues commonly associated with bat surveys (*e.g.* unsafe structures, disease risks and working at night in urban areas and the countryside);
l. biosecurity precautions and procedures (*e.g.* awareness of white nose syndrome).;
m. the different techniques that may be required to survey for different species (*e.g.* horseshoe bats);
n. sources of information on known distribution and abundance of bats; and
o. metadata standards / data sharing.

Skills

Individuals should have the skills and experience to be able to:

a. locate signs left by bats and use these to locate roosting position and give an indication of likely genus of bat and type of roost;
b. objectively assess the potential value of a building, tree or other structure/feature for use as a bat roost, according to standard guidelines;
c. identify safe techniques to survey different types of bat roosts and hibernacula for bats;
d. competently choose and use the correct equipment for the survey and recognise its limitations;
e. use a range of bat detectors to identify species or groups of species and record behaviour;
f. employ static detectors to complement manual activity survey techniques that identify species or groups of species, relative frequency, timing and type of bat use of a site both short and long-term;
g. record and understand survey effort and data required when surveying roost structures, underground sites, single tree roosts in a wood and flight lines;
h. assess likely impacts of a proposed development at the scoping stage and design surveys using appropriate techniques and level of effort;
i. take appropriate biosecurity precautions; and
j. take appropriate health and safety precautions.

If the individual intends to handle bats (as part of licensed activities), to independently and competently survey, they must be able to:

a. handle and transport a bat with due regard for its welfare and their safety;
b. recognise when handling is necessary and have an understanding of the sensitive period when handling is not appropriate (*e.g.* hibernation and pregnant females);
c. identify a live bat to a species (or a group of species); and

d. confidently age, sex and assess the reproductive status of a bat.

Please note that advanced skills and knowledge are required to interpret data and draft and complete mitigation licences. This information can be found in level two of BCT's Professional Training Standards.

Practical Experience

Whilst some of the knowledge and skills set out in this guidance can effectively be gained from personal study, vocational training and structured education, applicants for personal bat survey licences would also be expected to have gained practical experience (in varying seasons), preferably under the direct supervision of a suitably experienced and licensed bat trainer. The number of hours/surveys will vary depending on the individual; if enough experience is gained an individual may be able to complete their training within two to three years.

Trainees should seek to gain practical experience (multiple surveys) for a range of structures:

a. buildings (dwelling and non-dwelling);
b. barns;
c. bridges;
d. trees;
e. churches; and
f. underground sites.

As per the Bat Conservation Trust Bat Survey Guidelines, licensed bat workers should have experience of a variety of survey methods and situations:

a. roost surveys, including internal inspections, dawn and dusk surveys and swarming surveys; and
b. activity surveys, including walked transects, use of static survey equipment, bat call identification and interpretation.

They should have experience of a range of roost types, colony sizes and both single and multi-species sites. They should also have at least some first-hand experience of mitigation roost structures.

5. Reading

The following references are essential reading for those wishing to gain the necessary knowledge, skills and experience to survey for bats.

Bat Conservation Trust (2007) *Bat Surveys: Good Practice Guidelines*. Bat Conservation Trust, London. Under revision.

Bat Conservation Trust (2011) Professional Training Standards. Bat Conservation Trust, London. Due for publication November 2011.

Mitchell-Jones AJ (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough. Under revision.

Mitchell-Jones AJ and McLeish AP (2004) *The Bat Workers' Manual 3rd Edition*. JNCC, Peterborough.

Schofield H (2008) *The Lesser Horseshoe Bat: Conservation Handbook*. The Vincent Wildlife Trust, Ledbury, UK.

Stebbings R, Mansfield H and Fasham M (2005) *Bats in: Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring*, 433-449. Cambridge University Press, Cambridge.

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