

Bat detectors and surveys

Bats are not blind; in fact they can see almost as well as humans but to fly around and hunt for insects in the dark, they use a high frequency system called echolocation. This works similarly to sonar. Bats make calls as they fly, and listen to the returning echoes to build up a sonic map of their surroundings. The bat can tell how far away and what something is by how long it takes the sounds to return to them.

Bat Detectors

Bat calls are usually pitched at too high a frequency for humans to hear naturally – but they can be heard by using a bat detector. Individual bat species echolocate within specific frequency ranges that suit their environment and prey types. This means that we can identify many bats simply by listening to their calls with bat detectors.

Heterodyne detectors

These are tuneable – you select the frequency range to listen to. This makes them the best detectors for immediate identification of bats in the field. They work by filtering the inaudible bat sound with an ultrasonic signal from the detector, and producing the audible difference between the two sounds.

Sounds can be recorded and then replayed. They are the **cheapest** of the detectors and are simple to use, making them ideal for beginners.

Frequency Division and Time Expansion detectors

These detectors are more advanced and detect all frequencies so there is no need to tune into a specific frequency, and you don't miss any bats. Sounds can be recorded and used with sound analysis software. Time expansion allows a very detailed analysis. They are generally **mid to high-price** but cheaper versions tend not to retain amplitude information.

More information on detectors, prices and suitability can be found at www.bats.org.uk



Surveying

There are many ways to survey for bats and all of them are very useful at providing a picture of local, regional and national trends in bat populations. Surveys are suitable for a range of people from absolutely beginners to those who are more experienced at bat detection.

National Bat Monitoring Programme (NBMP)

The NBMP survey procedures are carefully designed so that anybody can take part in monitoring bats. By being involved you can make a great contribution to bat conservation and be part of the network providing vital information on national population trends. We run different surveys which cater to different levels of experience and knowledge. See overleaf for details of surveys and mapping.



Sunset / Sunrise Survey (Beginner: no detector needed)

There are two parts to this survey and you do not need a bat detector for either. You can also either be involved in the evening or morning survey...or both! The Sunset Survey simply involves spending the evening in your garden and watching out for any bats that fly past. The Sunrise Survey involves going out just before dawn to look for bats swarming before they return to their roost.

Colony Count (Beginner: no detector needed)

Surveyors are asked to count numbers of bats emerging from roosts at sunset on two evenings during the survey period. Surveyors choose their own roosts. Species counted include pipistrelle, Serotine, Natterer's and brown long-eared bat roosts.

Field Survey (Some experience: heterodyne detector)

Surveyors are asked to walk a triangular route in a randomly allocated 1km square on two evenings in July to record noctule, serotine, common pipistrelle and soprano pipistrelle bat activity with a bat detector.

Waterway Survey (Some experience: heterodyne detector)

Surveyors walk a route along a randomly allocated 1km stretch of river or canal on two evenings in August to record Daubenton's bat activity with a bat detector and torch. You need access to a bat detector and a torch.

Woodland Survey

(More experienced: frequency division detector)

Surveyors are asked to walk a 60-70 minute transect in a woodland of their choice. All species are recorded. Continuous recordings are made and these are analysed by BCT staff in order to identify and quantify the species that are present.

Hibernation Survey (Licensed: no detector needed)

In order to take part in hibernation surveys you need to hold a hibernation licence or know of a licensed surveyor who can accompany you.

Local and Park Surveys

You can replicate the methodology used in NBMP surveys, ranging from simply visual sightings of bats to more randomised and accurate detection, to survey your park and over time gather data on your park's bat activity. Additionally, your local council may be interested in this information so make sure you inform them once you start monitoring.

You may be able to include your park within one of the NBMP surveys (e.g. sunset survey, field survey). This means data you gather will not only be useful on a local level but will inform regional and national data collection. To discuss this, contact the NBMP team.

Details of all the surveys and sign up forms can be found at www.bats.org.uk/nbmp

The Great Big Bat Map

As part of the Count Bat project, we have launched the Great Big Bat Map to provide data on bats around London and rest of England. By logging onto the website, the public can record any bats they might have seen flying over their local parks and gardens. This will allow you to see where bats have been spotted in your local area. For more information and to get involved visit:

www.bats.org.uk/batmap