Wildlife Recording Kit: Bats

- Please ensure that all equipment borrowed is replaced; consider the people who are using the box after you.
- The borrower of the loan box is liable for the cost of any equipment lost or damaged.
- If anything is broken/lost, we would be grateful if you could let Surrey Wildlife Trust know as soon as possible so that we can replace this in time for the next people borrowing the box. You will be charged for any missing or broken equipment.
- Ensure that before surveying, you have the permission of the landowner to undertake these surveys.

Why survey?

A number of our bat species are important indicators that can tell us about the health of our ecosystem. Changes in population numbers can indicate when there are declines in insects, or when habitats are poorly managed or destroyed (https://www.bats.org.uk).

About the kit

Bat detectors are designed to pick up the echolocation calls of the bats. The bat detector translates these calls into sounds we can hear.

The Magenta detector can help determine if bats are present on site but isn't reliable enough to identify the species.

When to survey

The best time to look for bats is between April and October.

Bats will forage at dawn and dusk – so 20 minutes before sunset is a great time to start your hunt!

Equipment included:

What's included?	What you need to provide
High viz jacket x 5	Watch
Bat detector	Pen
Torch x 2	Printed copy of the survey form
Call frequency guide (attached to this guide)	
British Bats ID guide	
Re-chargeable AAA batteries x 4	

Instructions on use

Sunset survey

Different bats emit their calls at different frequencies (see frequency sheet at the end of this guide).

1. Simply turn the dial until the bat detector clicks on.
2. Either turn the dial on the bat detector to frequency 50 (as many of the bat species will be picked up at this range) or, alternatively, scroll through to the frequency you want. On a

digital bat detector, you can see the frequency you are at on the display. For a non-digital one, turn the dial to the desired frequency. However, note the magenta detector is not high-tech enough to reliably inform you of which species is present.

3. Some bat detectors also have a torch on them – you can turn this on/off using the button on the side.
4. Use the frequency sheet below to identify which bats you have in your area.
5. Record which species you see and hear, using the Bat Conservation Sunset Survey form.

Using the equipment safely

Before you use this equipment think about your risk assessment for the location and for the activities.

The following are some suggestions of hazards you might need to consider:

- Ground Surface – are there roots, holes, or kerbs to trip over?
- Weather – are participants appropriately dressed and have suitable protection from wet or hot weather?
- Plants and animals – brambles and stinging nettles can cause discomfort and participants should watch out for low branches.
- Germs – have participants got open cuts which might get muddy, and do they have an opportunity to wash their hands before eating?
- Using equipment – do you and other participants know how to use the equipment safely, is there a chance someone could hurt themselves?
- Appropriate supervision – are all children accompanied by a parent or guardian, and are they being appropriately supervised?
- Lone working – ensure you tell someone when undertaking surveys and they are aware of where you are and when you should return. Make sure you have a fully charged mobile phone and know where you can get signal.
- Group management – how will you ensure that participants don't get lost and are where you want them to be?

- Plan B – do you have an alternative activity or location if there is a problem with your planned activity?

Top tips

- Noctules are our "early risers" and emerge first – start you bat detector on a lower frequency to pick up these bats, then scroll up to a higher frequency as the evening goes on. Below is a copy of common bat frequencies to use.
- Bats will hunt for a good 2 hours – consuming 1000s of insects in one sitting.
- Listen out for the zip noise at the end of their calls – this is them eating on the wing!
- The bat detectors are directional so follow the flying bats to hear the noises for longer.
- Bats like "edge habitat" as they also use echolocation to navigate – so stick to pathways and woodland edges to maximise your chances of seeing them.
- They also love hunting near waterways – so near ponds or lakes, or along canals, are great places to find bats.
- For more information check out the fantastic Bat Conservation Trust or Surrey Bat Group websites

- If you see a bat in trouble whilst on your walk, contact the UK National Bat Helpline on 0345 1300228 for help – bats are protected by law and it is illegal to handle them or disturb their roosts, so always seek advice if you find a bat in distress.

Protected species

All bat species and their roosts in the UK are protected by UK law. This is due to the significant decline in numbers over the last few decades. The main causes of these declines are due to loss of roost sites, foraging habitat, and a decrease in insect numbers.

Call Frequency Guide

Frequency (kHz)	Species	Sound
20 – 45 (peak at 35)	Noctule	Slow Clip - Clap
27	Serotine	Fast bing bong
39	Nathusius' pipistrelle	Wet & slappy
25 – 50 (peak at 45)	Brown long eared	whisper – very fast
45	Common pipistrelle	Smack – wet
45	Whiskered	Dry clicks
33 – 85 (peak 45)	Brandt's	Dry clicks
35 – 85 (peak 45 -50)	Daubenton's	Machine gun
45 – 50	Grey long eared	Quiet
50	Natterer's	Irregular rapid clicks, like crumpled cellophane
50	Bechstein's	Tik
55	Soprano pipistrelle	Smack (wet & slappy)
80	Greater horseshoe	Continuous warbles
108	Lesser horseshoe	Continuous warbles