

BAILIWICK BAT SURVEY INSTRUCTIONS



Thank you for taking part in the Bailiwick Bat Survey!

We would like you to survey your chosen 500-m square on two occasions a year. A first early visit between April and mid-July, and a second late visit between mid-July and the end of October.

For existing volunteers:

If you volunteered last year, and would like to take part again, please go to www.bats.org.gg and request a survey square. If you are surveying the same square as last year, you are free to survey the same site as last year but please also consider whether you can survey another area in the square that contains other habitats. We are trying to build up as comprehensive a picture as possible of the bats in the area. This year we have high-resolution maps that you can download to help you choose a survey site in your square. These can be found in the acceptance email, or in the Manage my Bookings area on the booking website.

As you will be aware, squares are open to be booked by anyone, and so unfortunately, we are not able to guarantee you exactly the same square as last year. If your square is unavailable, please consider selecting another square to survey.

To take part you ideally need:

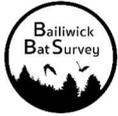
- A **smart phone** or **tablet** which will communicate the GPS coordinates of where you have put the detector to the detector itself so it can label the recordings with the exact location. This is not essential, but strongly recommended. If you do not have one, you can label the detector location when uploading.
- A **desktop computer** or **laptop** on which a freely-downloadable app can be installed to manage the uploading of sound recordings. It needs to have free space (max. 32Gb) on its hard drive to store the recordings temporarily before upload.
- A free account with BTO which allows you to upload the sound files to the cloud for analysis (details below).

If you do not have a smart phone or desktop/laptop computer, you can still take part, but please contact batsurvey@bats.org.gg to find out how we can help you.

STEP 1. SURVEY PREPARATION – BEFORE YOU START:

1. Book your square(s) to survey & Bat detector equipment

- Go to www.bats.org.gg and click on the green button 'Book Square' on the main page, or alternatively go to the top right-hand menu and click 'Bailiwick Bat Survey'. Once on this page, click on the map to book your square.
- In the new tab which opens in your browser, you will be taken to the booking system. Click on 'Login' at the bottom of the screen to book/request a square.
- If you already have a username and password, please login.
 - If you have not registered before and do not have a BTO username, click on "Register for MyBTO". Fill out your details to register and your MyBTO Account will be set up and you will be taken back to the map once this is completed
- Once you have logged in you can select squares and book equipment. Double click on a square to reserve it and click 'Reserve'. You can then click 'Book Equipment' to book your detector from one of our Bat Centres.



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2. Manage your bookings

- You can manage your bookings by clicking on the line 'Manage my bookings'. This takes you to the management page where you can select or cancel squares and equipment booking slots. You can also view your square on a map or download a high-resolution map.

3. If you are new, register for the Acoustic Pipeline

- The Acoustic Pipeline is where you can upload your sound recordings once you have completed your survey.
- There are multiple links for you to register, e.g. on the 'Manage my bookings' page, click 'Acoustic Pipeline' in the top menu or click on the "Register for the pipeline" link a bit further down the page. Links are also in the automated email when you booked out a bat detector. Clicking one of these links will enable the Acoustic Pipeline on your account.
- If registered previously, you don't need to register again. Clicking the 'Acoustic Pipeline' link in the 'Manage my Bookings' page will take you to your 'Data Home' for your Acoustic Pipeline account and you don't need to do anything further.

4. Download Desktop Upload Client

- Next you will need to install a copy of our Desktop Upload Client from the Acoustic Pipeline home page at <https://app.bto.org/acoustic-pipeline/public/login.jsp>
- To download it, log into your account at the above page, and click on the 'Get the Desktop Upload Client' web link.
- This small piece of software manages the uploading of sound recordings (with information about the location and dates/times) for processing. It will download the sound files from the bat recorder to your computer and store them safely until your computer finishes uploading them to our servers for analysis. For this, log into your account and click on the 'Get the Desktop Upload Client' web link.
- Regular updates are issued and you may need to update the app. This is done automatically when you open it.
- Install the correct version (for Windows or for Apple Mac) for your computer. Links are given for both (for Windows users see the below Troubleshooting problem #1).
- The Desktop Upload Client will make a folder on your hard drive where recordings will be stored temporarily during uploading. Once you open it and log in you are ready to upload recordings.

What you will need

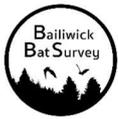
- Windows or Apple Mac desktop or laptop computer. Tablets such as iPads are not compatible.
- Space on hard drive for installing Desktop Upload Client (about 179 MB).
- Space on the hard drive for temporary saving of the sound files during upload (up to 32 Gb).



2. Install Song Meter Mini Configurator app on your mobile phone or tablet

- Our bat detectors are from a company called Wildlife Acoustics. The model is called the 'Song Meter Mini Bat'. The settings to record an hour before dusk and turn off an hour after dawn are already installed on the detector. When it 'hears' a bat, or a small mammal or bush-cricket, it starts recording and saves a sound file (wav file) on its memory card. These recordings are what we need to analyse to identify which species are present.
- However, to set it running and to **record the detector's exact GPS location**, we need a small mobile phone app called the **Song Meter Mini Configurator** app installed on your phone. This is available from the Apple App store or Google Play store. Please download and install it onto your mobile phone.
- The App adds the recording location (latitude and longitude) to the recordings, which is valuable for us, and will save you time later. We do this so that we know where the recordings are made. If you cannot do this step, this is not a problem.
- **Please note - when you upload the recordings to us, it will prompt you to check the location you put the detector in on an online map. Please remember to change location to the correct placement of your detector.**

That's it – you're done and you do not need to do this again! Everything is now in place and you are ready to survey! Good luck!



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Troubleshooting Problems in Step 1:

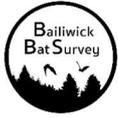
Windows Users - Troubleshooting problem #1. Windows Defender says the file might be harmful and not to run it!

We are aware of this issue which occurs on PCs (but not Apple Macs). The app has been fully registered with Microsoft and is safe. However Windows Defender, which protects your computer against viruses etc, will only stop highlighting any new apps once they have been downloaded 3,000 times! The image below is from Windows 10, other versions may vary. Some browsers may also show a similar message. Please click to save the app anyway. If you need help, please contact us at batsurvey@bats.org.uk



All Users - Troubleshooting problem #2. My username and password do not work in the Desktop App!

Most people have had no problems using the Desktop App. However a very few have had problems. Please remember that your password is CASE SENSITIVE. If you are having issues, please contact us at batsurvey@bats.org.uk



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STEP 2. FIELD DEPLOYMENT OF BAT DETECTOR:

1. Inserting the Batteries and SD card into the detector

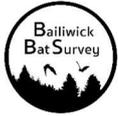
- The Song Meter Mini detector uses 4 AA rechargeable batteries. In your box, you will find one set of colour-coded batteries (with a second set of batteries inside the detector), and at least one memory card.
- Remove the snap-on lid on the detector by grasping the long edges with your fingers and applying slight pressure with your thumbs to the center. The lid will pop off to expose the recorder's interior.
- Remove the batteries from inside the bat detector. **IMPORTANT – ensure that this set of batteries is put on charge for the next person as soon as you can.**
- Insert the 'new batteries' which would have been charged by the previous user. A single set of batteries can be used for **all nights of recording** at a location. They last a long time!
- Push the SD card into SD card slot. You will feel/hear it click into place.
- Slide the white power switch on the Song Meter Mini detector up to **ON** to power the detector on.
- The detector is then ready to be deployed in your square. Please take the bat kit box and your **smart phone** or **tablet** to your chosen location within your square.

2. Detector placement and deployment

- Choose somewhere within your 500-m square to survey, ideally as close to the centre of the square as possible/practical. **However please place at least 5 feet (1.5m) in any direction from vegetation, flat surfaces, or other obstructions.** This is critical - too close to vegetation, can result in sounds reaching the detector at different times, resulting in distortion & making it difficult to identify the species.
- Once you have chosen your location, the detector is deployed by carefully pushing the pointed metal ground stake (not the pointy end of the black pole) vertically into the soil – try to hammer it in about 20cm with the provided mallet.
- Slotting the pole against the inside of the stake, push your pole into the ground and attach the stake and pole to one another by using the re-usable cable ties. The pole will then be stable in the ground.
- Detectors should then be mounted horizontally at the top of the pole (at least 7 foot up) using the re-usable cable ties, with the microphone pointing to the side as shown in Image 1.



Image 1: The detector mounted to the top of the pole horizontally with the microphone pointing to the side.



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3. Using the mobile device app to save the location to the recordings

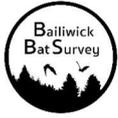
- Once you have completed the above steps, take the lid off the bat detector.
- Make sure Bluetooth is enabled on your mobile device and launch the Song Meter Mini Configurator app.
- The bat detector will be detected by the app and will appear on the screen in the app on your phone/tablet.
- While keeping the app open & lid of the bat detector off, press and hold the **Pair button** inside the detector for 3 seconds.
- The Bluetooth LED on the bat detector will blink green, indicating it is ready to pair.
- In the app on your phone/tablet, tap the **Pair button** when it appears on the screen. The detector's details will turn green, indicating success pairing. **IMPORTANTLY, do this step at the location where you have deployed the detector, (and NOT before so that the location pairing is accurate)**
- A pop-up on your device's screen will ask if you want to set the recorder's location to your mobile device's location. Tap OK. All recordings will now carry the location (latitude and longitude) of the detector.
- Now tap the **Unpair button** on your device's screen. Keep the detector switch ON. The bat detector is now set and ready to deploy and will automatically wake up and sleep at the appropriate times (and on subsequent nights).
- Replace the lid of the bat detector.

4. Completing deployment of the detector:

- Extend/insert the rest of the pole's segments (the pole should be the tallest it can be).
- If you have placed the detector in a public area, there is a laminated project information label that you should attach to the pole to inform inquisitive folk!
- (The kit is invisibly security coded but if you are concerned about leaving the detector outside, please deploy and retrieve the bat detector at dusk/early in the morning.)
- Ideally, we ask you keep the detector out surveying for four nights in the same place. If this is not possible, you can move the detector to another location within the square, but **IMPORTANTLY if you do, please update the location, by re-pairing the detector** with your mobile device to save the new location.

5. At the end of your 4 night's surveying:

- At the end of your four night's recordings, lower the pole and remove the snap-on-lid on the detector & slide the white power switch to **OFF** to power down the detector.
- Remove the SD card and keep safe.



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STEP 3. AFTER RECORDING:

1. Uploading recordings for processing

- If you have an internal SD card reader on your desktop computer, insert the SD card with your recordings. If you don't, please insert the card into the provided SD card reader and plug the SD card reader into a USB port on your computer.
- Click on the '**BTO Acoustic Pipeline**' icon on your desktop computer to open the '**Desktop Upload Client**' that you installed previously (see survey preparation above).
- When requested, enter your email address and password to login.

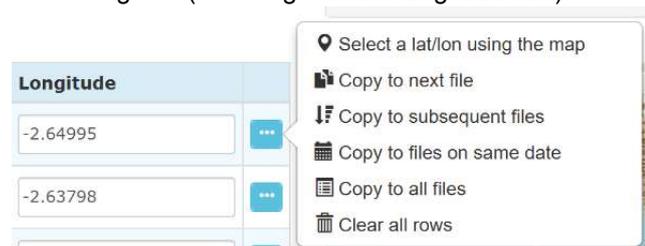


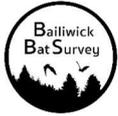
Start new upload:

- Click on '**Start New Upload**' button.
- Next to '**Choose files for upload**', click on '**Select Files**' button.
- Now select the folder than contains the recordings that you want to process.
 - **IMPORTANT - you are not able to select individual wav files within a folder so just select the folder.**
 - **Please note .wav files in the folder are not shown by the Windows version of the App. This is not a problem – the recordings are in the folder you just cannot see them in the app.**
- Next to '**Add Survey Metadata**', click on '**Enter Data**' button.

Updating Survey Metadata (providing additional information associated with recordings)

- This section allows the user to provide an (optional) **Upload Name** to be provided with the results (e.g., 'My Garden', 'Reservoir', "WV3380SE" etc).
- Users are also asked to assign the recordings to a **Project**. **IMPORTANTLY please select Bailiwick Bat Survey to ensure that your recordings are assigned to the correct project.**
If this is not an option for you from the drop-down, please email us at batsurvey@bats.org
- **It is also important to ensure that the location attached to the recordings is correct by checking the Latitude and Longitude.**
- If you paired the Song Meter Mini Bat with your phone on site, the location will be embedded in the wav files produced by the bat detector, and this information is pulled out automatically however it is not always accurate so needs to be checked.
- To check the location attached to your recordings, please look at blue location pin on the map facility provided – if it is in the correct location of where you placed your detector, you have completed the survey metadata.
- If the location is not correct, or you did not pair the detector with your device, **you will need to input the Latitude and Longitude.**
- To do this, click on the button with the three white dots on the first recording row (to the right of the longitude box).
- Click 'Select a lat/long using the map'
- Your mouse will change to a cross. Using the '+' and '-' on the left hand side of the map to zoom in and out, click on the correct location of where you placed your detector. The latitude and longitude will then update on this first row.
- To copy this correct location to the rest of the recordings, click on the 3 dots button and select 'Copy to subsequent files'.





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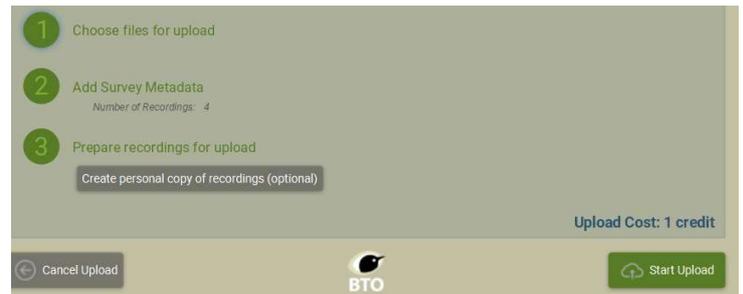
- Once you have completed the Survey Metadata, click on **'Save Data'**
- *The selected Project and Latitude and Longitude must be correct to ensure that the correct analysis is applied to the recordings, and that identifications of species that are 'rare or unexpected' are flagged.*

Preparing recordings for upload

- Now click on **'Prepare Recordings'**. You are now given the option to **'Create personal copy of recordings (optional)'** if you wish to save a copy to your device.

Final Step to Start Upload

- Once the above is all complete, click on **'Start Upload'** in the right hand corner of the app to start the upload process.



2. Once the upload has started:

- **IMPORTANTLY** – once the upload process has started, please note a backup copy has been saved to the app (you don't need to wait until upload has completed).
- Please delete any files or folders on the SD card (for use by the next person), safely eject the SD card, and return the SD card to the bat equipment box to ensure that the SD card is returned.
- You can then return your bat kit box to the Bat Centre.
- The Desktop Upload Client shows the progress of the upload. You can Pause and Resume the upload at any point, or if there is a break in internet connection.
- Note that the speed of upload can be very different depending on the speed of the user's broadband. It may take several hours to upload four nights of recordings, and may best be left running overnight.
- Once recordings have uploaded, you can close the Desktop Upload Client. You do not need to do anything else. You will be emailed once the results are ready to view. Results are normally returned within 24 hours after uploading.

3. Accessing your results on the Web Portal

- Once the recordings have been processed, you will be emailed to let you know that processing has completed, and the results will be accessible then via the web portal <https://app.bto.org/bat-pipeline/> on the **'My Uploads'** page.
- The Classifier results can be downloaded as a csv file by clicking on 'Download' under Classifier Results. The csv includes all results (one line for each wav file and species identified – so there may be more than one line for a wav file if multiple species are present in a recording), regardless of the confidence associated with the identification.

IMPORTANT: the classifier is not perfect. Further manual verification of recordings and results will be carried out at the end of the season before the data are used.