



Devon Bat Survey Instruction Manual

Introduction

1. Devon Bat Survey began through the Devon Greater Horseshoe Bat Project in 2016 with the aim of finding as many bats as possible. Please see www.devonwildlifetrust.org/what-we-doour-projects/devon-greater-horseshoe-bat-project for further information. The Devon Greater Horseshoe Bat Project came to an end in early 2021, and the Devon Bat Survey now continues as part of the Saving Devon's Treescapes project led by Devon Wildlife Trust (DWT), with assistance from Devon Biodiversity Records Centre (DBRC), and funded by the National Lottery Heritage Fund. The aim is to find out more about all the bats which rely on ash and other trees, in some of the project's core areas and beyond. For more information on Saving Devon's Treescapes, please visit: www.devonwildlifetrust.org/what-we-doour-projects/saving-devons-treescapes.
2. Full instructions are below. If you have any problems/queries concerning any of the kit or the survey process, check our FAQs which can be found on our webpage www.devonwildlifetrust.org/devon-bat-survey-2025, along with the project **Risk Assessment, which you must read before deploying the detector**. Here you can also find other useful documents such as landowner permission forms and details of the Host Centres.
3. There is a short (5 mins) video showing how to set up your bat detector available here, should you prefer that to the written instructions <https://www.youtube.com/watch?v=A38bPYUTn7s>

If you have any questions, please contact Lindsay, the Devon Bat Survey Coordinator on 07909 490278 (Mon-Thurs) or email us on bats@devonwildlifetrust.org.

You will be invited to join the Devon Bat Survey What's App Group. This is entirely optional. The group is a forum to share photos of your detector in location (with you in the shot too, if you like). It has also proved interesting to have surveyors share their results with each other. By sharing photos in this group, you are giving Devon Wildlife Trust permission to use them in our communications about the project and for marketing purposes. Please contact us if you do not wish your photos or comments to be used in this way.



Overview

- The detector should be placed out before dusk on the day that it is collected from the host centre. The detector should be left in place for the 3 nights of your survey **in a secure location** – please leave it in the same place each night and **do not be tempted to check or move it**. After the final night of recording, you will use your computer to upload the sound recordings from the SD card in the detector to the BTO Acoustic Pipeline (see further instructions), and return the detector kit to the host centre before closing on the same day **with one set of batteries charged ready for the next person**. (If you do not have a suitable computer or your broadband speed is slow, you may return the SD card in the freepost envelope provided, together with a note containing your name, survey location and dates). **If your booking spans a period when your host centre is closed, you may have a slightly longer booking slot – you can leave the detector out for the whole time.**

Step 1: check the kit

- Check that the kit box contains the correct equipment as shown in the photo as well as jiffy bag with a pre-paid stamp. You do not need to inform us if there are no spare SD cards in the kit box. Your host centre will ask if you'd like to borrow a bamboo cane (which doesn't fit in the box 😊).





6. **Make sure that the batteries are fully charged using the battery tester provided.** Batteries should read 'good' on the battery tester's display. If not, charge batteries before deploying the detector (warning: do not leave charging batteries unattended – they may get hot when charging). Use the battery tester to re-check the status of the batteries. The display on the battery charger often shows that charging is in progress but won't necessarily tell you when batteries are fully charged.



7. **How to test the batteries:** simply push the red slider as far to the right as it will go and insert the battery into the space (with positive charge on the right, next to the slider). Read the display to check that it says 'good'.
8. **Insert the charged batteries into the detector.** Open the casing using the thumb depression in the centre of the right-hand side. Ensure batteries are firmly and correctly inserted and that the small slide switch at the top of the right-hand side of the detector casing is switched to 'INT' (internal power source).
9. There should be at least two SD cards with the kit. **Test one to make sure it is empty** using the SD card reader, if needed, to insert the SD card in your computer.

10. How to check the SD card



Slot the SD card into the SD card reader (the writing on the SD card should be facing upwards) OR use the SD card port on your computer if you have one. Now insert the SD card reader into the USB port of your computer). A dialogue box may appear on your screen giving a few options, and should select 'Open folder to view files' – check that the next window says, 'This folder is empty'. Please note

that we have different makes of SD card readers which all work in the same way. If no dialogue box appears you can check the SD card by finding 'SDHC' in your document library and double clicking. There should be no content on the SD card.

If you do find files or a DATA folder on the SD card it is probably because a previous user forgot to reformat the card before returning the kit box. Please reformat the card (on a Windows computer, right click on the SDHC: where it appears in your file menu, click 'format' then 'start' and you will be told when the action has completed and can then safely eject the SD card).



Step 2: Set the location in your detector

IMPORTANT – You need to input the 4-digit Grid Reference location information into the bat detector.

11. To accurately record the location of your survey, you need to set the file name on the bat detector. **You will need the four-digit grid square number for the square you selected at the booking stage (which is on the original square booking confirmation email). This should be the square of the location at which you will place the detector.** If you do not have this, you can find it by going to www.gridreferencefinder.com and put in your location details. Click on the right-hand button of the mouse to drop a pin where you will put the detector (if you are using a tablet, press and hold for 2 seconds on your site to drop the pin). This will give you a 10 and a 6-figure grid reference. Take out the 3rd and 6th number from the 6-digit grid reference to get the four digit one e.g. SX577515 would have the 7 and 5 removed to become SX5751.



Inputting your grid reference into the detector

12. DO NOT change the longitude and latitude on the detector – if you have changed it, please contact us as soon as you can.
13. Open up the detector lid and follow steps on inside lid of detector.
 - At step 4 of these instructions do the following:
 - a. Scroll down to **'Settings'** and press enter.
 - b. Scroll down to **'Location'** and press enter.
 - c. At **'Prefix'** scroll right, to where it says **SURVEYSS1212 (or similar)**
 - d. Use the up and down keys to change the last 6 digits to the reference of your survey grid square. Once you have entered each character use the right arrow to move to the next character. Your entry should look something like **SURVEYSX1234.**
 - e. Press right arrow until the cursor is flashing over the **"–"** in front of the word **'Prefix'**.
 - f. Use the left arrow to navigate back to the main menu.
14. Continue to follow the instructions inside the lid of the detector.

If the detector screen goes blank while you are navigating the menu, you can restart it by sliding the switch on the top right side of the detector to **"EXT"**. Leave it for 30 seconds and then slide it back to **"INT"**. The screen goes blank if there has been no activity for a short while.



Step 3. Choosing where to place your bat detector

15. Bats prefer quiet areas away from too much disturbance.

Please do not put detectors in fields with livestock – they like to eat the microphones!

See below for some advice on potential detector locations:

Suitable locations	Unsuitable locations
<ul style="list-style-type: none"> • Hedgerows • Lines of trees • Old trees • Orchards • Leafy gardens with lots of shrubs • Woodland glades • Banks of rivers and streams 	<ul style="list-style-type: none"> • Centre of open fields • Areas where the detector is visible to the public. • Near streetlights and other well-lit areas • Busy roads • In areas without protection from livestock

Important!

16. If you are placing your detector on land which you **do not** own, you **must** gain permission from the **landowner** first and make sure that the detector is not in danger of being stolen or removed by members of the public. You should speak to the landowner prior to selecting your grid square. A permission form and introduction letter are available on our webpage <https://www.devonwildlifetrust.org/devon-bat-survey-2025>. A copy may also be available in the survey folder in the detector kit box. Please email a copy of the completed form to bats@devonwildlifetrust.org.

Step 4: Setting up the detector

17. Once you have chosen a suitable location for your detector and followed the instructions on how to enter your location, you will need to set it up ready for deployment. Once the detector is set up it will say that it is going to sleep – this is normal; the detector will start to record before sunset and will go to sleep again in the morning after sunrise.

- I) Attach the end of the microphone cable to the detector – this is a push fitting – then carefully twist the collar to lock it in position.
- II) You will find some reuseable cable ties in the kit box; use these to secure the microphone to the bamboo cane provided. Extra wire is provided in case you want to attach the microphone to a tree instead of the cane. **Do not detach the microphone from the cable at any point.**
- III) Take the detector and the cane out to your chosen location, push the thin end of the cane into the ground until stable.



- IV) Place the detector safely on the ground out of sight. **Ensure its casing is firmly closed to protect from the weather.**
- V) Secure the microphone to the thick end of the cane with the garden wire at about chest height. Try to position the microphone to point outwards at a roughly 45° angle and with minimum vegetation in front of the microphone (see photo above). This will stop rain from interfering with the microphone. The squidgy cover on the microphone should not be pushed all the way down as this will interfere with the recordings.



Charging the spare batteries

18. While your detector is in place, please use the battery tester to check the spare batteries and then charge them to ensure they are 'good' for the next bat survey participant. When you return the kit to the host centre please put/leave the charged batteries in the battery charger, and the used batteries loose in the box. **NO BATTERIES SHOULD BE LEFT IN THE DETECTOR.**

Fire warning: battery charging can be hazardous. Please do not leave batteries charging for long periods unattended. Do not rely on the battery charger to tell you when the batteries are fully charged – please test the batteries using the battery tester and stop charging once the batteries are 'good'.

At the end of your survey

19. **On the final day of your hire, disassemble and return the detector kit.** Please reverse the set-up process to pack away the detector kit. The batteries should be removed from the detector and placed loose in the box. The cable can be unplugged from the detector unit. **Do not disconnect the microphone from the cable.**
20. The SD card should be removed, and your data uploaded to the Devon Bat Survey on the BTO Acoustic Pipeline (**see next section**) **OR** posted back to DWT in the envelope provided (*please ensure it is inside it's protective case*). You may wish to make a copy of the data to your own computer or storage media, until you have received your results. **Once the data has been uploaded and saved to the BTO Acoustic Pipeline, you can reformat the SD card (delete all contents of the card)** and replace it in the box with the spare SD cards for re-use.
21. Place all the equipment back in the box as they were found. Don't forget to return the bamboo cane too!



Return the kit to your host centre during their opening hours, ready for the next person to collect the following day. Failure to return the detector on time may mean you inconvenience the next person who is expecting to borrow it.

NOTE: If you have slow or unreliable broadband or are not technically confident, you may return your SD card with its recordings to DWT in one of the pre-paid envelopes provided. Please add a note with your name, survey date and location. Depending on the volume of surveys returned to DWT and other work, it may take a few weeks for us to provide your results. Please be patient.



The BTO Acoustic Pipeline – Processing your data

Uploading data and viewing results on the BTO Acoustic Pipeline

Congratulations on completing the recording part of the survey! All that remains is to upload the sound recordings from the SD card to the BTO Acoustic Pipeline via your computer, and then view your results.

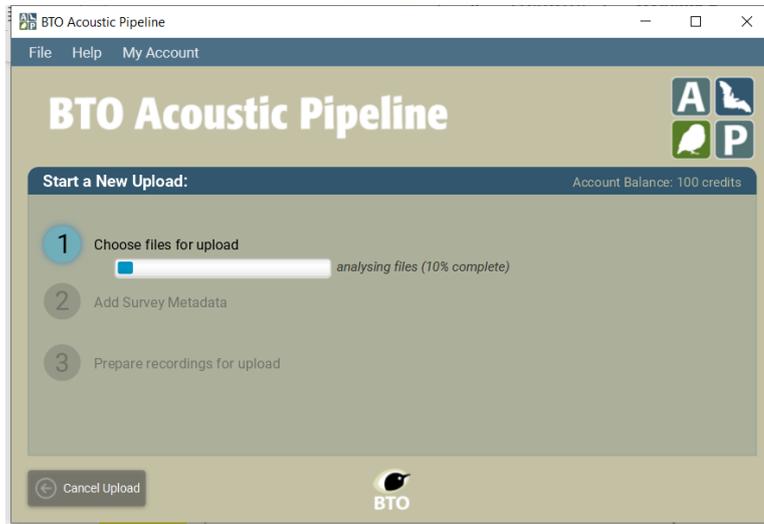
1. You will have registered for a 'MyBTO' account when you signed up to take part in the survey. Log into your account at <https://bto.org/my-bto>.
2. You should also have downloaded the **Acoustic Pipeline Desktop Client** to your computer. If you did not do that, do it now by following the instructions in the appendix. Then come back and follow the next step.

Uploading recordings for processing

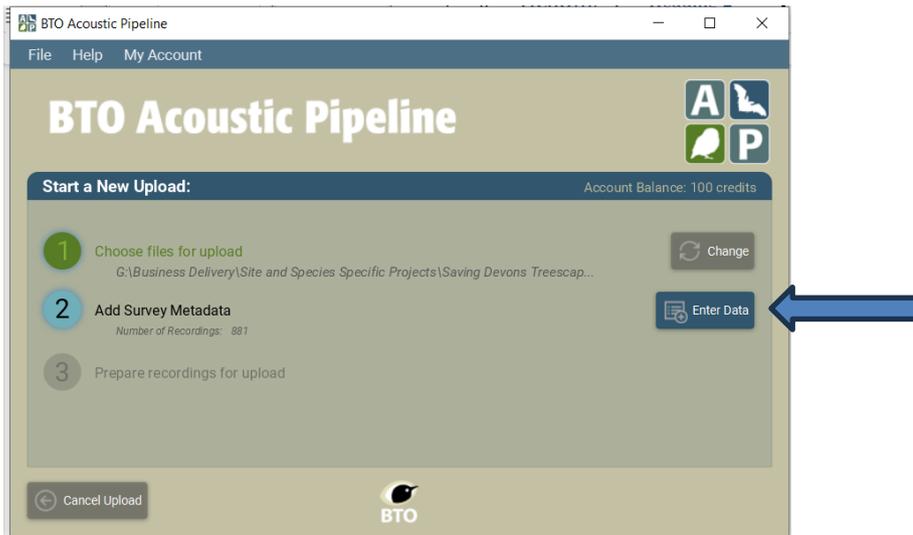
THIS MUST BE DONE ON THE FINAL DAY OF YOUR SURVEY BEFORE YOU RETURN THE DETECTOR KIT TO YOUR HOST CENTRE.

3. If you have an internal SD card reader on your desktop/laptop computer, insert the SD card containing your recordings. If you don't, please insert the card into the SD card reader provided, and plug the SD card reader into a USB port on your computer.
4. Find and open the SD card on your file menu. Make a copy of the 'DATA' folder from your SD card onto your computer (copy the folder, not the individual files – the contents will automatically be copied). **Note you will need sufficient hard disc space to do this which could be up to 32GB if your SD card is full.**
5. Click on the 'BTO Acoustic Pipeline' icon on your desktop computer to open the 'Desktop Upload Client' that you installed previously.
6. When requested, enter your username and password to login.
7. 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 (this will be **the DATA folder that you copied to your computer**; DON'T try to upload direct from the SD Card).

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. Trust it!**



8. Next to 'Add Survey Metadata', click on 'Enter Data' button.



Updating Survey Metadata (providing additional information associated with recordings)

9. The metadata section allows you to provide an Upload Name (or Batch Name) for your survey – **PLEASE GIVE IT THE NAME OF YOUR SURVEY SQUARE e.g. SX1234**. Do not call it 'Johnny's garden'.



BTO Acoustic Pipeline

Survey Metadata

Batch Name: SX6113 **Upload Size:** 1.9GB
Project: Devon Bat Survey **Number of Recordings:** 881
Upload Cost: 0 credits

Devon Bat Survey [Upload Cost: Free]
Citizen Science (ultrasonic) - shared [Upload Cost: 1 credit per GB]
Commercial (ultrasonic) - confidential [Upload Cost: 7 credits per GB]

Filename	Recording Date	Latitude	Longitude
SURVEYSX6113_20230924_193057.wav	24/09/2023		

Your batch name should be your 4-digit grid reference – it should match that in your filenames if you set the detector location for your survey correctly.

- Please assign your recordings to the **Devon Bat Survey** from the drop-down menu. If you do not see this as an option, it means you have not linked your My-BTO account with the Devon Bat Survey. **It is crucial you do so otherwise Devon Wildlife Trust will not be able to access your results.**
- Ensure that the location attached to the recordings is correct. To check the location attached to your recordings, please drop a 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. To drop the pin:
 - Use to +/- feature on the map to zoom in to where you placed your detector.
 - Use the ellipsis (three dots) to the right of the first row of filenames and choose the option to 'select a lat/long using the map'.

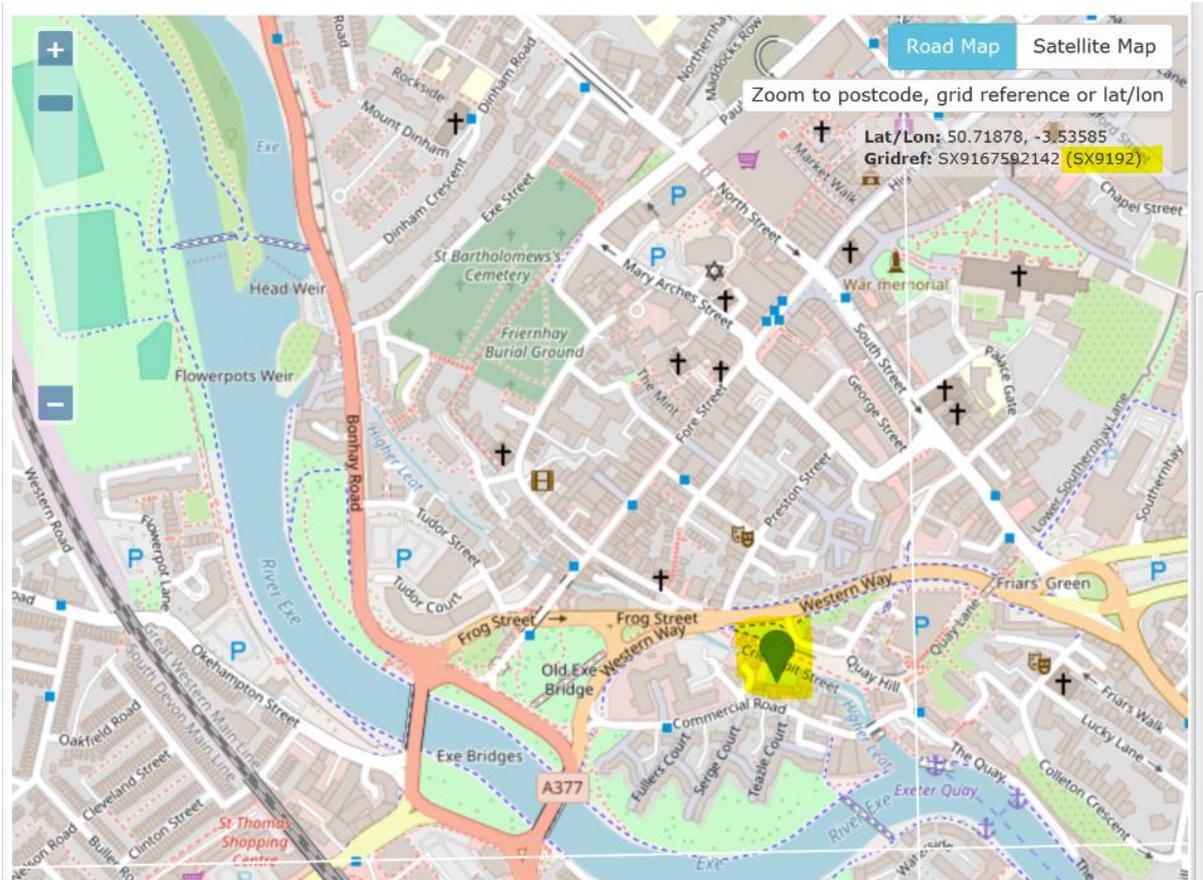
BTO Acoustic Pipeline

Survey Metadata

Filename	Recording Date	Latitude	Longitude
SURVEYSX6113_20230924_193057.wav	24/09/2023		
SURVEYSX6113_20230924_193732.wav	24/09/2023		
SURVEYSX6113_20230924_193956.wav	24/09/2023		

Select a lat/lon using the map
Copy to next file
Copy to subsequent files
Copy to files on same date
Copy to all files
Clear all rows

- A blue marker appears on the map where you double clicked, and the lat and long for this location are automatically added to the first filename. You can see the 4-figure grid reference that your marker is in in the top right of the map (NOTE: the lat and long shown on the map shows the current location of your cursor, not that of the blue marker you just placed).



12. To copy this correct location to the rest of the recordings, click on the 3 dots button at the end of the first row and select 'Copy to subsequent files'.
13. Alternatively, you can find the correct latitude and longitude using <https://gridreferencefinder.com/> and manually input the lat and long (to 5 decimal points) to the first row, and then 'copy to subsequent files'.
14. Once you have completed the Survey Metadata, click on 'Save Data' (Green button to the bottom right of the screen)

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

15. 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.
16. Once the above is all complete, click on '**Start Upload**' in the right-hand corner of the app to start the upload process.



Once the upload has started

IMPORTANTLY – the upload process, once started, will complete faster if your computer screen does not go to sleep (you may need to change your system display settings and ensure your computer is plugged in to the mains).

17. Once you have finished with the SD card, **please delete ALL files or folders on the SD card (so that it is ready for use by the next person), safely eject the SD card, and return the SD card to its place in the bat equipment box. You can then return your bat kit box to the Host Centre.**
18. 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 three nights of recordings and may best be left running overnight (in practice it will be rare it takes this long).
19. 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 of uploading. You can check the status of your upload in the 'My Data' tab of your Acoustic Pipeline account.

Accessing your results on the Web Portal

20. Once the recordings have been processed, you will be emailed to let you know that processing has completed, and the results will be accessible via the link in the email or, via the web portal [My Data | BTO Acoustic Pipeline](#) and click 'My Data' from the top menu. Select the relevant month and year from the drop-down boxes to see your uploads.

The screenshot shows the 'My Data' section of the BTO Acoustic Pipeline web portal. The navigation bar includes 'Home', 'Desktop App', 'My Data' (highlighted), 'Projects', and 'Support Hub'. The user is identified as 'Ms Lindsay Mahon' with a 'Logout' option. Below the navigation bar, the 'My Data' title is followed by a description: 'The table below shows the status of batches of recordings processed with the BTO Acoustic Pipeline, along with links to the classifier results'. There are filter boxes for 'Year: 2024' and 'Month: May', both highlighted with yellow circles. A 'Refresh Status' button is visible. The main content is a table with the following data:

Processed Date	Batch Name	Project	Cost	Number of Detections	Classifier Used	Classifier Results	Options
29/05/2024 15:19:04	SS6030 Key: 2024052915195BQMFFEY	Devon Bat Survey	1	100	Ultrasonic Classifier	Download	View Visualisation
07/05/2024 13:55:22	SX9192 Key: 202405071355R1XE0ZUN	Devon Bat Survey	13	8238	Ultrasonic Classifier	Download	View Visualisations

At the bottom of the table area, it says 'You have 2 uploads'.



21. The Classifier results can be viewed online and/or downloaded as a spreadsheet (.csv file) by clicking on 'Download' under Classifier Results. The spreadsheet 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.

22. Visualisations of your individual survey results are also available via the web portal (see last column in screenshot above).

23. You can also view the Devon Bat Survey's overall results using the link: https://app.bto.org/acoustic-pipeline/results/project/project_results_choice.jsp?code=DWT

Interpreting your results

24. The classifier will present results for every .wav file it identifies a species for. The key columns to note are highlighted below.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	RECORDING	ORIGINAL FILE NAME	ORIGINAL	LATITUDE	LONGITUDE	SPECIES	SCIENTIFIC ENGLISH NAME	SPECIES GI	PROBABILITY	WARNINGS	ACTUAL D.	SURVEY D.	TIME	CLASSIFIER USER ID	UPLOAD K	UPLOAD N	SURVEY NAME		
2	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Myobra	Myotis bra Brandt's Bat	bat	0.19	Low confide	#####	#####	07:00:19	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
3	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Myobra	Myotis bra Brandt's Bat	bat	0.95		#####	#####	19:07:58	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
4	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Myodau	Myotis dai Daubenton's Bat	bat	0.65		#####	#####	19:45:28	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
5	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Myodau	Myotis dai Daubenton's Bat	bat	0.27	Low confide	#####	#####	23:26:05	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
6	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Myonat	Myotis nat Natterer's Bat	bat	0.91		#####	#####	20:17:14	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
7	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pippip	Pipistrellus Common Pipistrelle	bat	0.98		#####	#####	17:56:04	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
8	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pippip	Pipistrellus Common Pipistrelle	bat	0.98		#####	#####	17:56:36	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
57	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pippyp	Pipistrellus Soprano Pipistrelle	bat	0.99		#####	#####	17:25:22	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
58	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pippyp	Pipistrellus Soprano Pipistrelle	bat	0.99		#####	#####	17:48:51	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
59	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pippyp	Pipistrellus Soprano Pipistrelle	bat	0.99		#####	#####	17:34:52	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
60	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pippyp	Pipistrellus Soprano Pipistrelle	bat	0.26	Low confide	#####	#####	07:59:06	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
61	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pleaur	Plecotus a Brown Long-eared Bat	bat	0.5		#####	#####	19:35:58	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
62	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Pleaur	Plecotus a Grey Long-eared Bat	bat	0.18	Low confide	#####	#####	23:25:58	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
63	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Rhihip	Rhinolophi Greater Horseshoe Bat	bat	0.99		#####	#####	17:03:57	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
64	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Rhihip	Rhinolophi Lesser Horseshoe Bat	bat	0.99		#####	#####	18:35:43	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
72	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Rhihip	Rhinolophi Lesser Horseshoe Bat	bat	0.99		#####	#####	19:45:03	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
73	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Rhihip	Rhinolophi Lesser Horseshoe Bat	bat	0.99		#####	#####	22:36:15	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
74	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	Rhihip	Rhinolophi Lesser Horseshoe Bat	bat	0.99		#####	#####	18:24:34	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
75	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	bird	bird specie Bird	bird	0.22	Low confide	#####	#####	17:04:04	ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
76	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	No ID					#####	#####		ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			
77	50*5973+-SURVEYSX7579_2021	0	50.5973	-3.76751	No ID					#####	#####		ClassifEsp/LMAHON	20230420	Pete's dat	Devon Bat Survey			

Original File Name – this will show your survey square reference and the date and time of the sound recording.

English Name – this is where you will find the name of the bat species detected.

Species – this will show 'bat' but you may also see 'bird', 'cricket' or 'No ID' for species that the classifier identifies (or not, in the case of No ID).

Probability – the value in this column gives the degree of confidence in the identification of the species i.e. 0.98 is 98%; 0.22 is 22%. **Our advice is to disregard all identifications with a probability score below 0.7 (70%). Please also note that there is still potential for error with identifications over 0.5** (this is why we manually verify the data before it is used scientifically).

25. The number of times a species appears tells you how many times a bat of that species has been recorded passing by (which is different from the number of bats) – it could be many bats or just one bat flying past lots of times! If a species only appears a few



times in your results, particularly if the probability score is 0.7 or lower, this bat *may* have been misidentified by the software.

26. The following bats are particularly difficult to identify to species level by sound calls alone:-

- The *Myotis* bat species (Natterer's, Brandt's, Whiskered, Daubenton's, Bechstein's, and Alcahoie bats)
- The 2 long-eared bat species (Brown and Grey).
- *Nathusius pipistrelles* are also sometimes incorrectly identified as they and the other pipistrelle species have some very similar calls.

For this reason, we strongly suggest you consider all *Myotis* species together ('we have *Myotis* bat species flying near us') and the same for long-eared bats.

27. As a general guide, the more bat passes there are for a species, and the higher the probability scores, the more likely it is that that bat species was present. Devon Biodiversity Records Centre uses the threshold of 0.7 (70%) probability for its heat mapping work, having manually verified the data.

IMPORTANT: The results are produced for your information only and are indicative of the species present in the vicinity of your survey. As these results have been produced by the classifier and are unverified, they should not be reproduced or used without prior approval by Devon Wildlife Trust and must not be used for any development planning purposes. The data will be manually verified at the end of the survey season before it will be used scientifically.

Thanks for taking part in the Devon Bat Survey! We hope you enjoyed it.



If you have any questions, please contact Lindsay, the bat survey coordinator, on 07909 490278 (Mon-Thurs), or email us on bats@devonwildlifetrust.org.

You will soon receive a feedback request from us by email – we would love to receive your comments on the survey so that we can continue to improve it.



Appendix:

Downloading the Acoustic Pipeline Desktop Client/App

- Install a copy of the 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 'Desktop App' in the top menu.
- 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 App 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.

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 SD card to your computer and store them safely until your computer finishes uploading them to BTO's servers for analysis.

Troubleshooting

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 bats@devonwildlifetrust.org



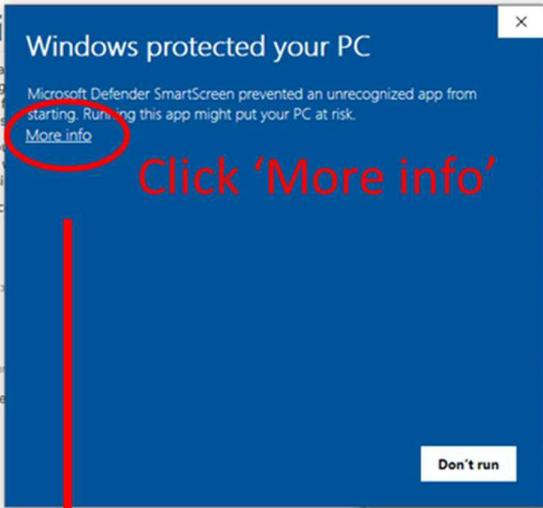
Home Desktop Client My Uploads Projects Help Dr P.W. Atkinson Logout

Desktop Upload Client

Our desktop client allows you to easily upload BTO Acoustic Pipeline, by selecting recording cards. The process can be paused/resumed and recordings can be queued for upload at the server. The desktop client is linked to your BTO Acoustic Pipeline account. Once you have started an upload it will appear in this submission as it moves through the processing pipeline. Use the download links below to install the client.

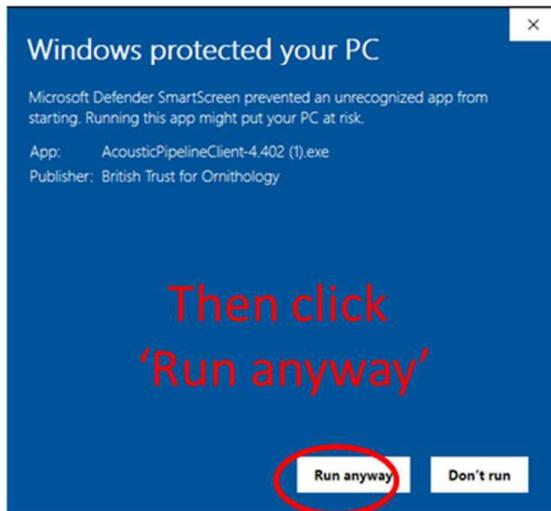
- Download for Windows
Version: 4.402, 64-bit
SHA256 checksum: 75914b324f0d98866a8022231c72f0008e946632
- Download for Apple Mac
Version: 4.402
SHA256 checksum: b39751a85517a3808a750f38952a8b11b8916738

For assistance with using the client, or to view our help pages please see our [Help](#) pages.



Click 'More info'

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Registered Charity Number 216652 (England & Wales), SC039193 (Scotland).



Then click 'Run anyway'

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. Your USER ID is probably not your email address.

If you need reminding of your USER ID, please contact us at bats@devonwildlifetrust.org .

If you are having trouble registering for the BTO Acoustic Pipeline or need a password reminder or reset please contact BTO at acoustic.pipeline@bto.org