

A Duddon Valley Catchment Project: Bat sound monitoring (and its bycatch)

Matt Taylor



Project Background

- Part of an ongoing wider project to protect and enhance the status of habitats and species in the Duddon Valley
- Species recording is an important part of this project
- Titley Chorus detectors used to collect records of several species groups, including bats

DUDDON CATCHMENT PROJECT



BAT SOUND MONITORING

Volunteers are needed to spend several hours each month conducting surveys in multiple locations. The surveys will pick up sounds made by bats that are at frequencies inaudible to the human ear.

Can you help us survey bats?

Contact us to volunteer or find out more:

duddonriverassociation@gmail.com

sustainableduddon@gmail.com

southlakesredsquirrels@gmail.com

Project Planning

- Realisation of the scale of a river catchment hits!
- Plan to randomly sample a variety of habitats across the catchment using sample squares
- Detector deployed weekly between March and October 2025 for passive ultrasonic detection of bats
- Initial plan to manually analyse the sound files



Field Work Fun!

- Trial and error initially working the Titley Chorus detector
- Field work started, travelling around the catchment deploying the detector
- Rapid realisation how lucky we are to live where we do!

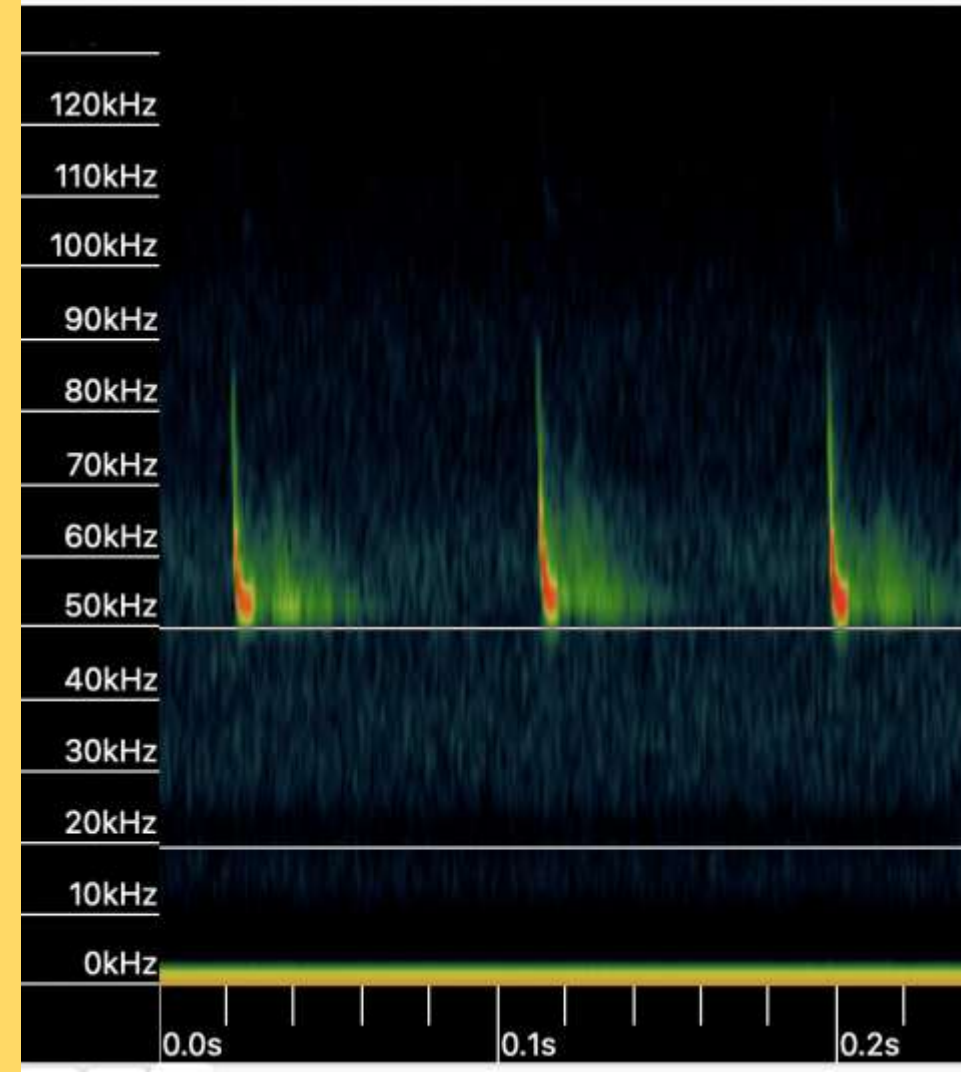
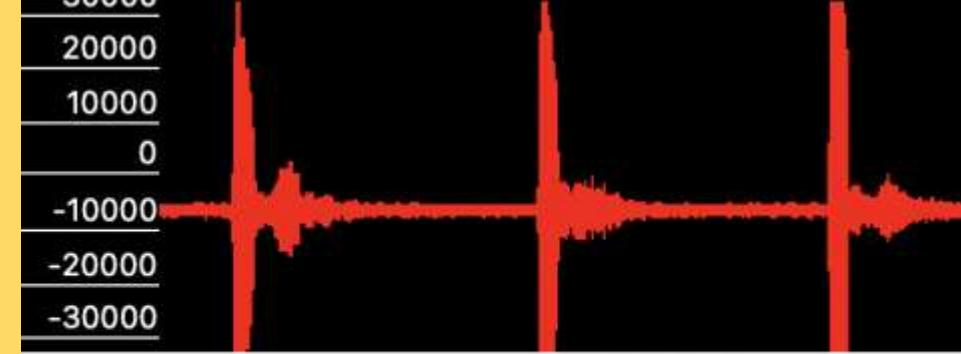


- Gradual realisation I was collecting more sound files than I could manually analyse!



Analysis Issues

- Huge amount of sound files to analyse manually
- Manual analysis wasn't a viable option
- Trial of BTO Acoustic Pipeline for ultrasonic sound file analysis



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17 items

17 folders ~ 400 GB

Information

Created

5 Apr – 12 Oct 2025

Modified

5 Apr 2025 – 20 Jan 2026

Tags

Add Tags...



More...



BTO Acoustic Pipeline

Loading Complete!



BTO Acoustic Pipeline

- Desktop App to upload files for analysis
- Web browser page for viewing and downloading results

The screenshot displays the BTO Acoustic Pipeline web interface. At the top, there is a navigation bar with the BTO logo (Birds Science People) on the left and the Acoustic Pipeline logo (A and P icons) on the right. The navigation bar includes links for Home, Desktop App, My Data, Projects, and Support Hub, along with user information for Mr Matt Taylor, MyBTO, and a Logout button.

Batch Summary

[← Back to My Data](#)

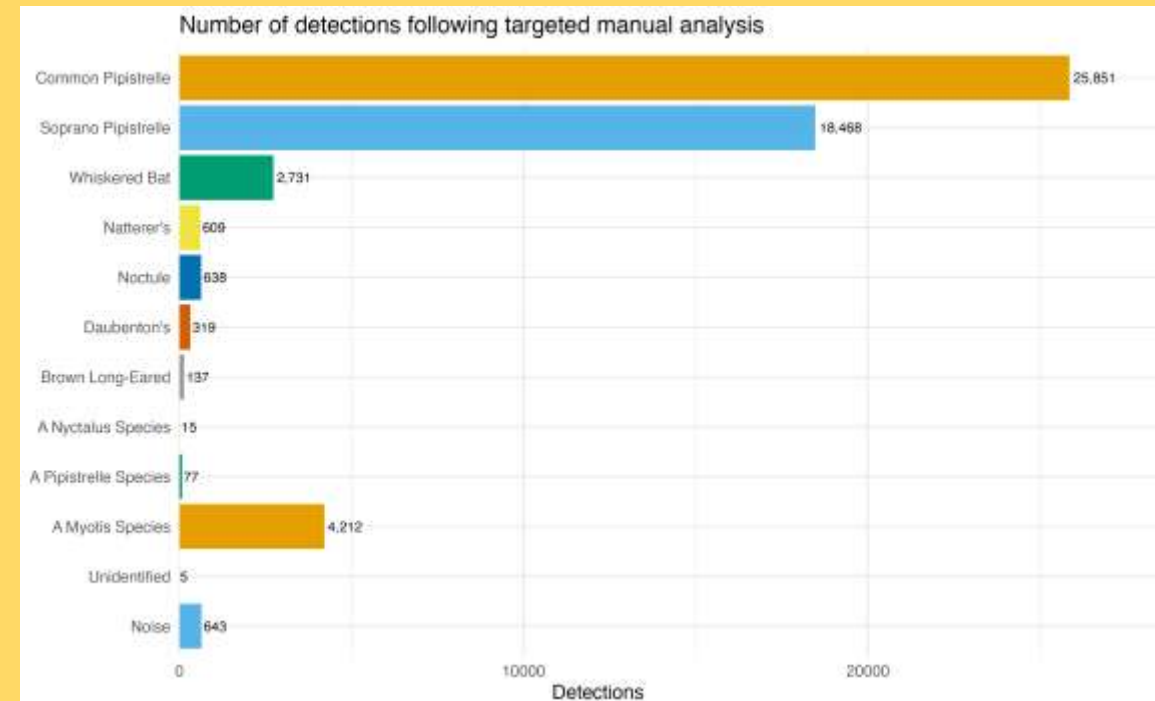
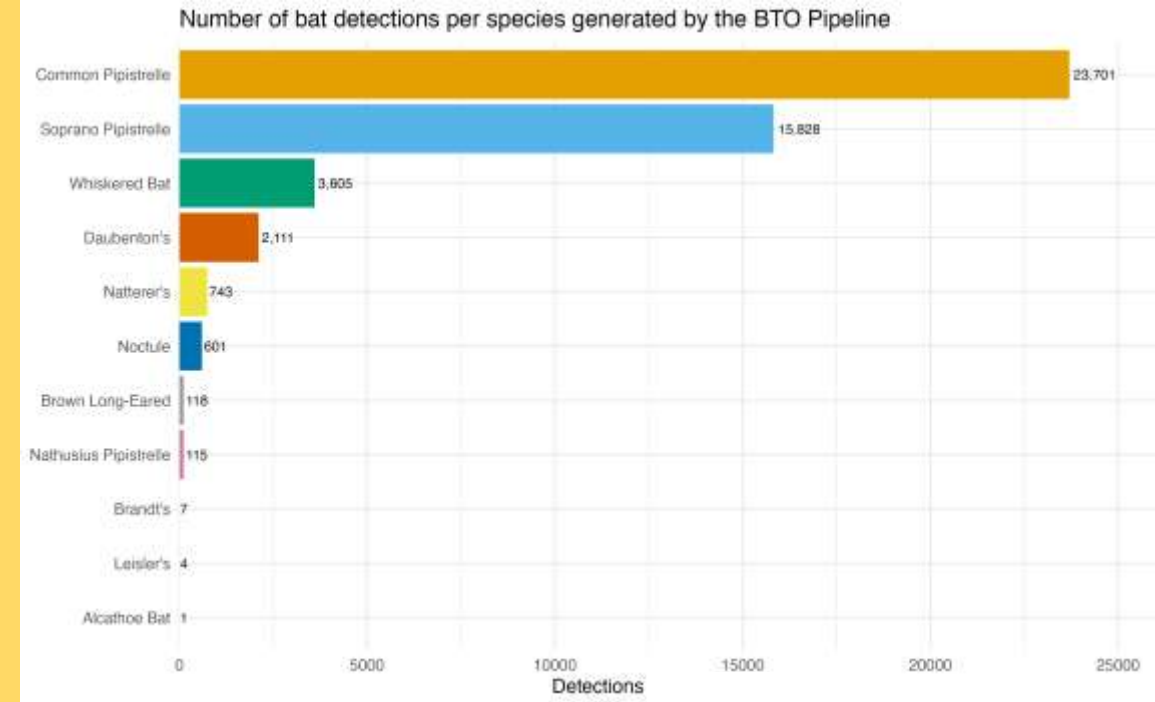
Details for batch: Sq2094 pt1

Processed date	29/12/2025 19:25:51
Batch key	2025122919259YEIR6MA
Classifier used	ClassifEspGBR-NRN2025-10-18_1
Project	Citizen Science (ultrasonic) - shared
Processed by	MT899

Locations in batch

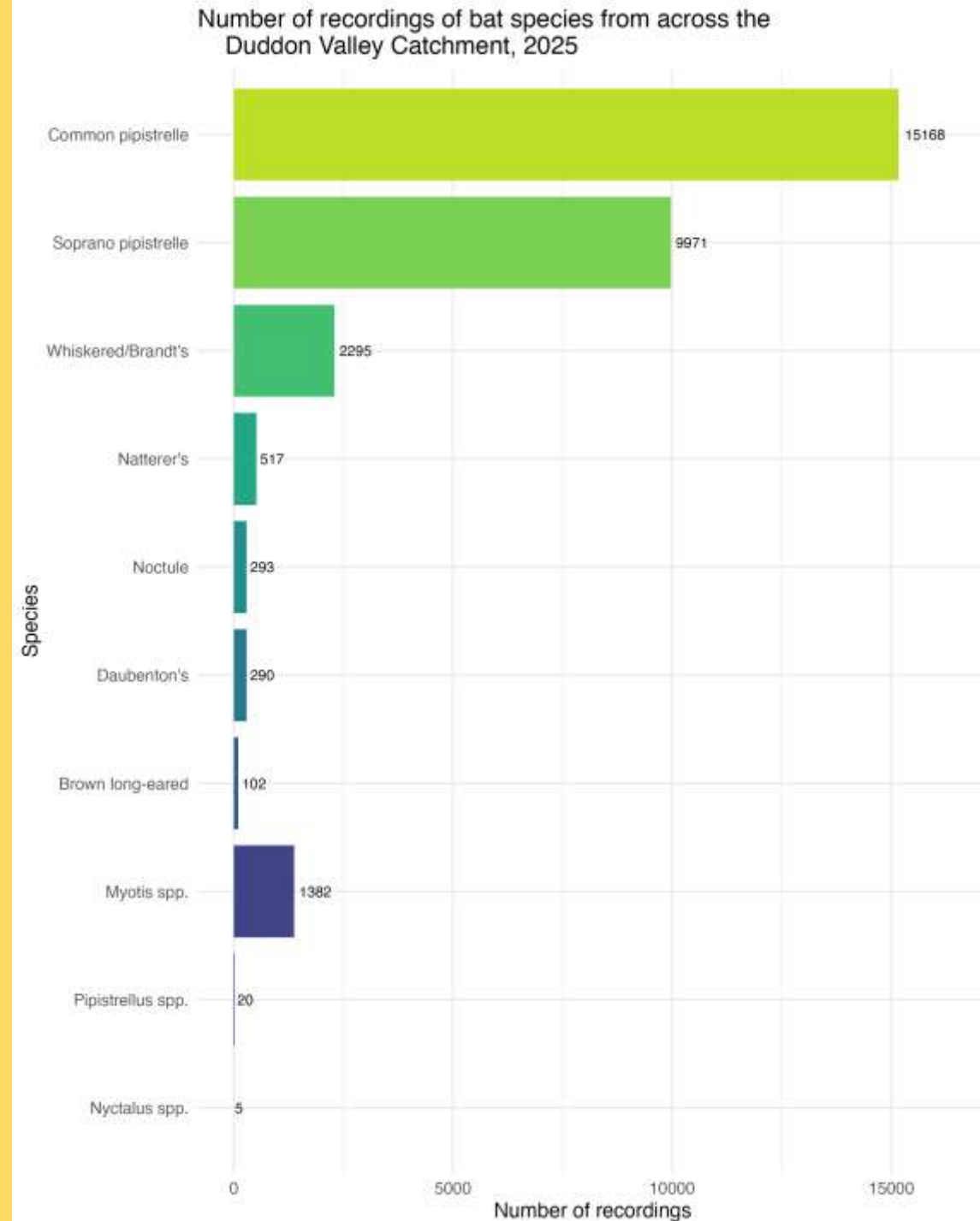
Semi-Automated Analysis

- BTO Acoustic Pipeline does a lot of the hard work, saving a lot of time
- Draft semi-automated analysis protocol:
 - Manual analysis of any automatic identifications where the probability is less than 0.7
 - Analysis of anything that is considered out-of-the-ordinary (e.g. Alcatloe bat, Nathusius's pipistrelle)
 - Consideration of habitat when checking automatic identification



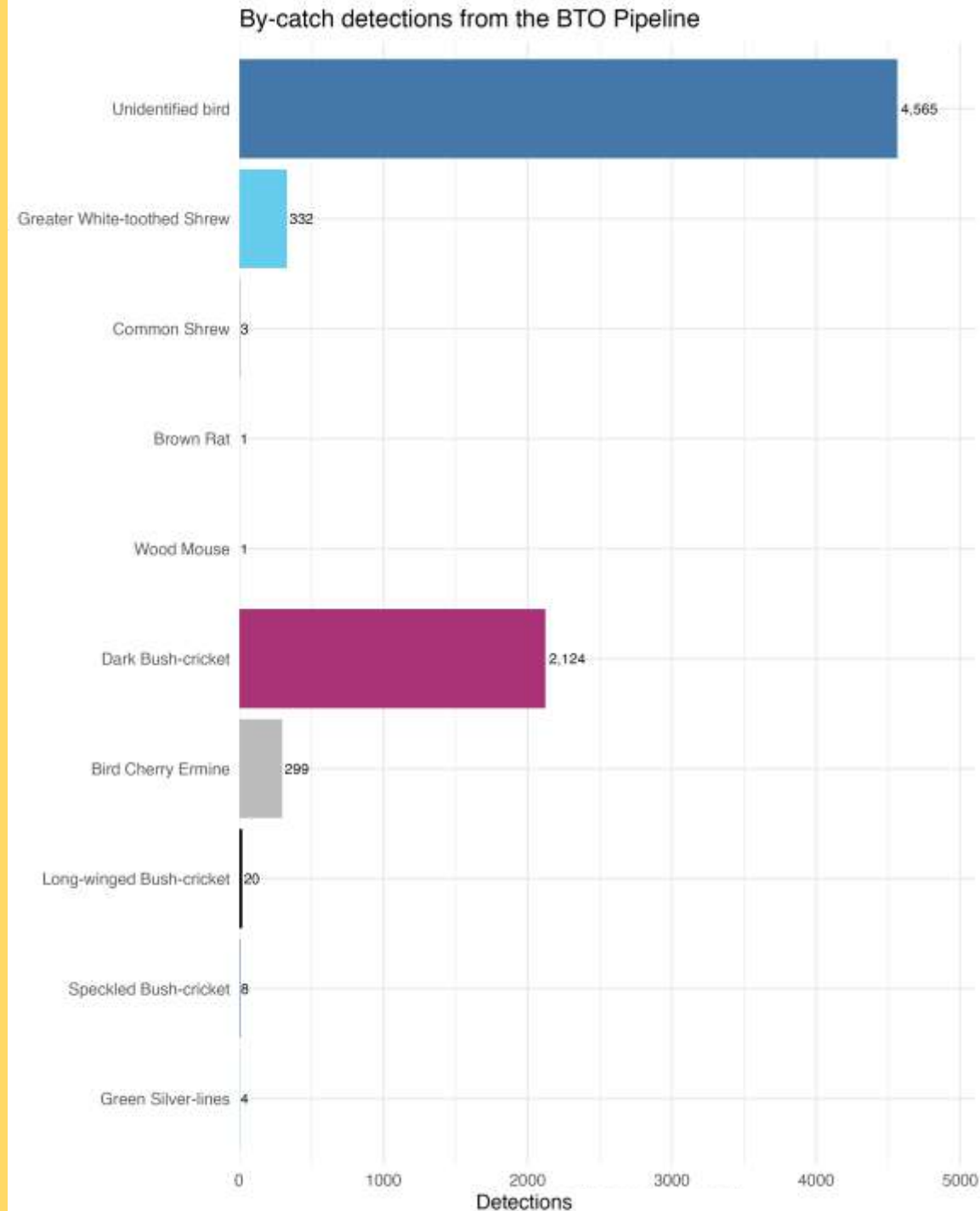
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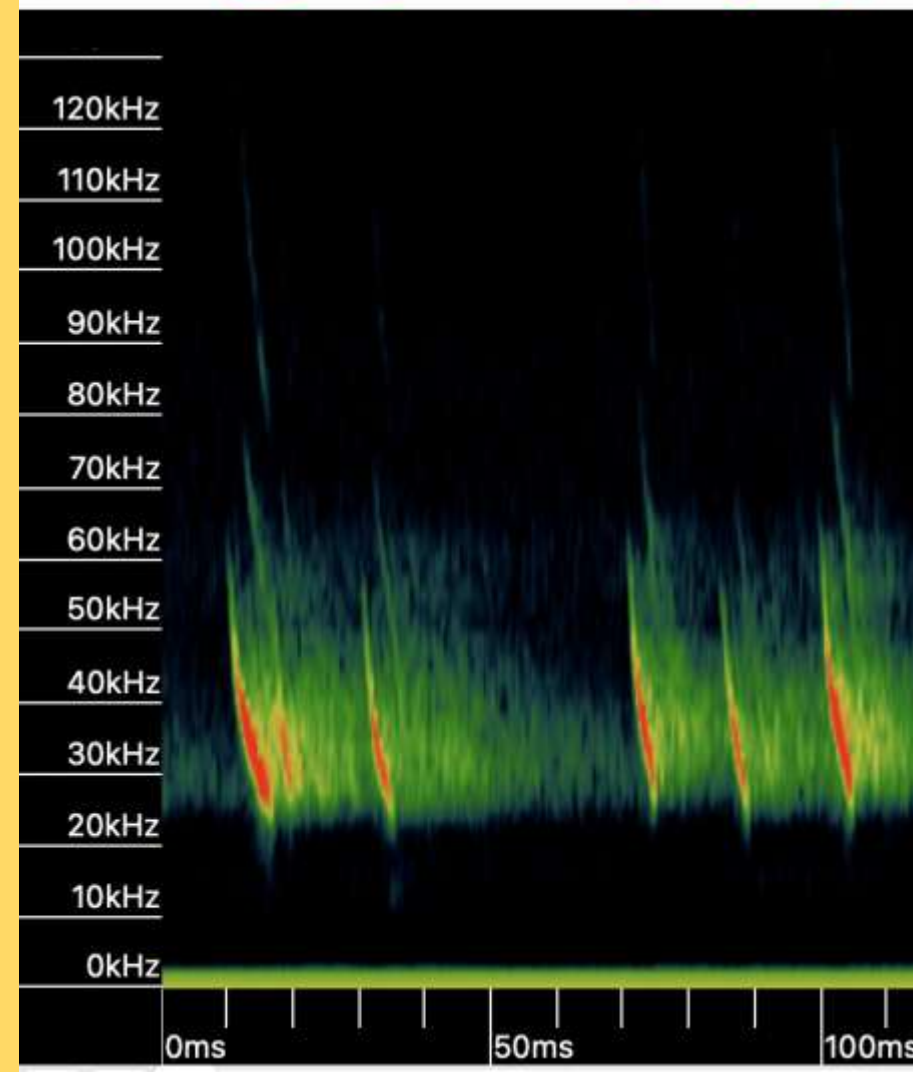
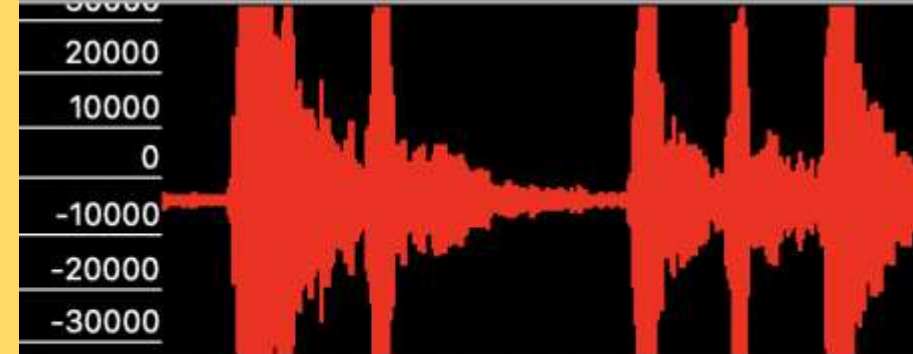
Bycatch

- BTO Pipeline will detect up to 19 terrestrial mammals that produce ultrasonic noise including hazel dormouse
- It will detect a selection of invertebrates including moths and bush crickets
- Potential for use in recording of small mammals and potentially invertebrates across Cumbria?



BTO Acoustic Pipeline

- Pros:
 - Semi-automated analysis saves time
 - Sharing sound files with the BTO allows for further development of the Pipeline
 - Bycatch findings could increase records of other species groups in Cumbria
- Cons:
 - It's not always right!
 - Potential data handling issues when manually analysing results
 - Results can be limited by recording quality



Thank you!

- Thank you for listening!
- Thank you to the following people for their help and assistance:
 - Rick Brown and members of:
 - South Cumbria Rivers Trust and Duddon River Association
 - Sustainable Duddon
 - Rich Flight, Will Walton and Victoria Oxley
 - Members of the Facebook group “Bat Call Sound Analysis Workshop”



<https://scrt.co.uk>



<https://sustainableduddon.co.uk>