

LOTTERY FUNDED

Wings of the Tees

Cleveland Bat Group

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River Tees
Rediscovered →



Wings of the Tees.....Improving habitat for winged wildlife

Involving local communities in celebrating and learning opportunities about the winged wildlife of the River Tees.

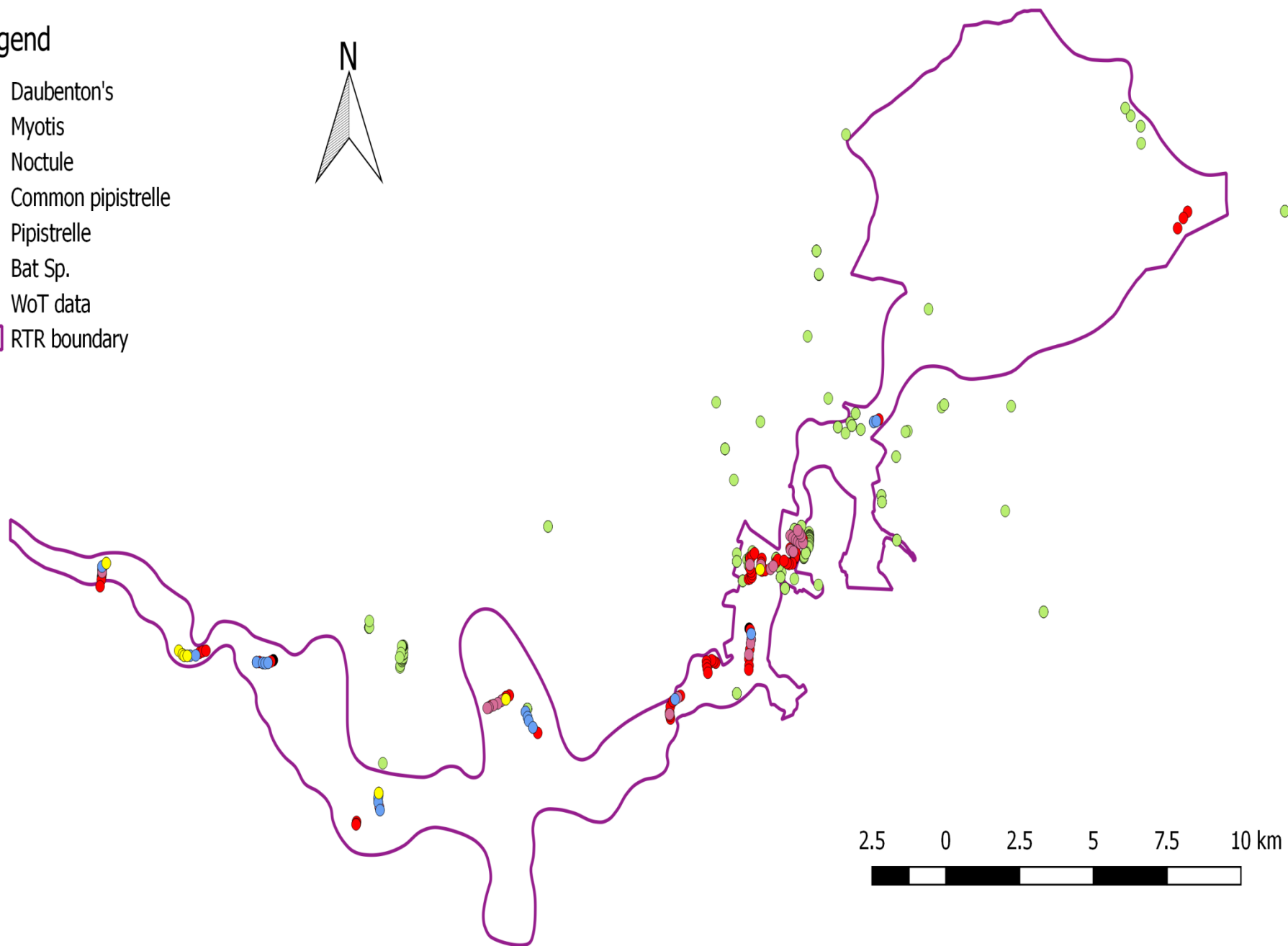
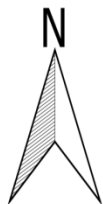
Focus on UK priority species, Barn Owls and bats, delivering a programme of monitoring and habitat assessment for targeted provision of nesting boxes, and other means of habitat improvement

To achieve this we aim to recruit a team of volunteers to assist with a huge variety of tasks.



Legend

- Daubenton's
- Myotis
- Noctule
- Common pipistrelle
- Pipistrelle
- Bat Sp.
- WoT data
- RTR boundary



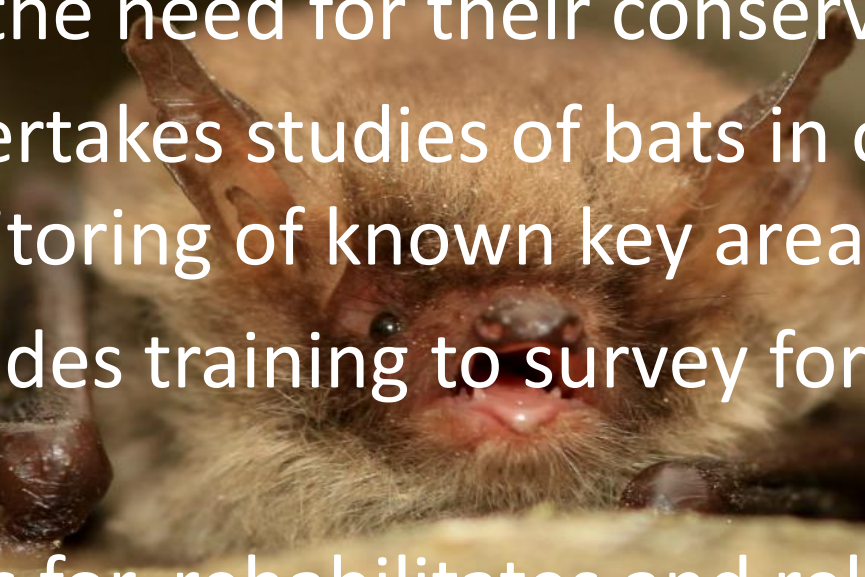
Bat Conservation Trust



East Cleveland
BATSCAPE



Cleveland Bat Group

- 
- Raises awareness of the 9 species bats in Cleveland and the need for their conservation.
 - Undertakes studies of bats in our area, including the monitoring of known key areas.
 - Provides training to survey for bats and care of injured bats.
 - Cares for, rehabilitates and releases orphan and injured bats.
 - Deals with bat problems, being a liaison between the public and Natural England.

British bats

- British bats: vesper bats and horseshoe bats
- 18 species of bat
- 9 In Cleveland
- One third of all our mammal species





Noctule

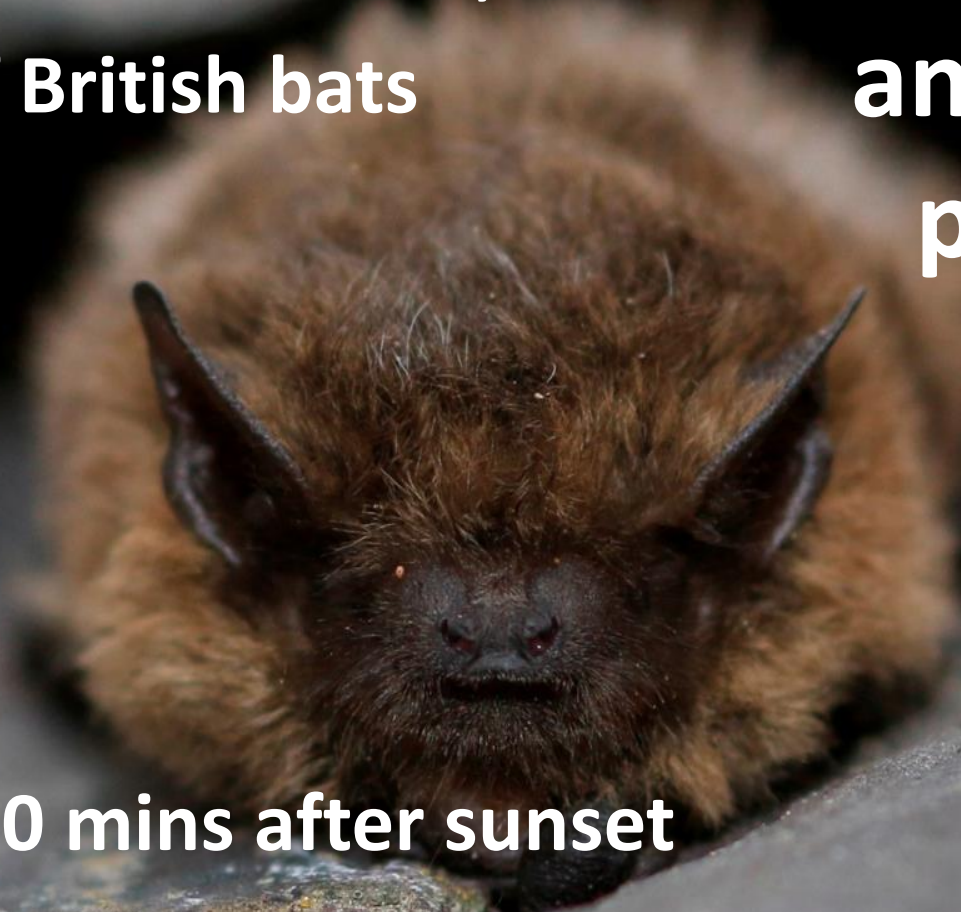
- Tree roosting
- Emerge first
- Very loud calls
- Echolocates at 17 to 22kHz
- Chip-chop

- Our commonest bat
- Has adapted to houses, most urban of British bats

Common and Soprano pipistrelle

- Emerge 20 mins after sunset
- Echolocate at 45 kHz and 55 kHz
- Wet slapping sound

Irregular beats



Myotis bat species

- More rural bats
- Emerge 50 minutes after sunset
- Echolocate 15- 145kHz

Daubenton's
Natterers
Brandt's
Whiskered

- Regular buzzing
- Un-tuned radio



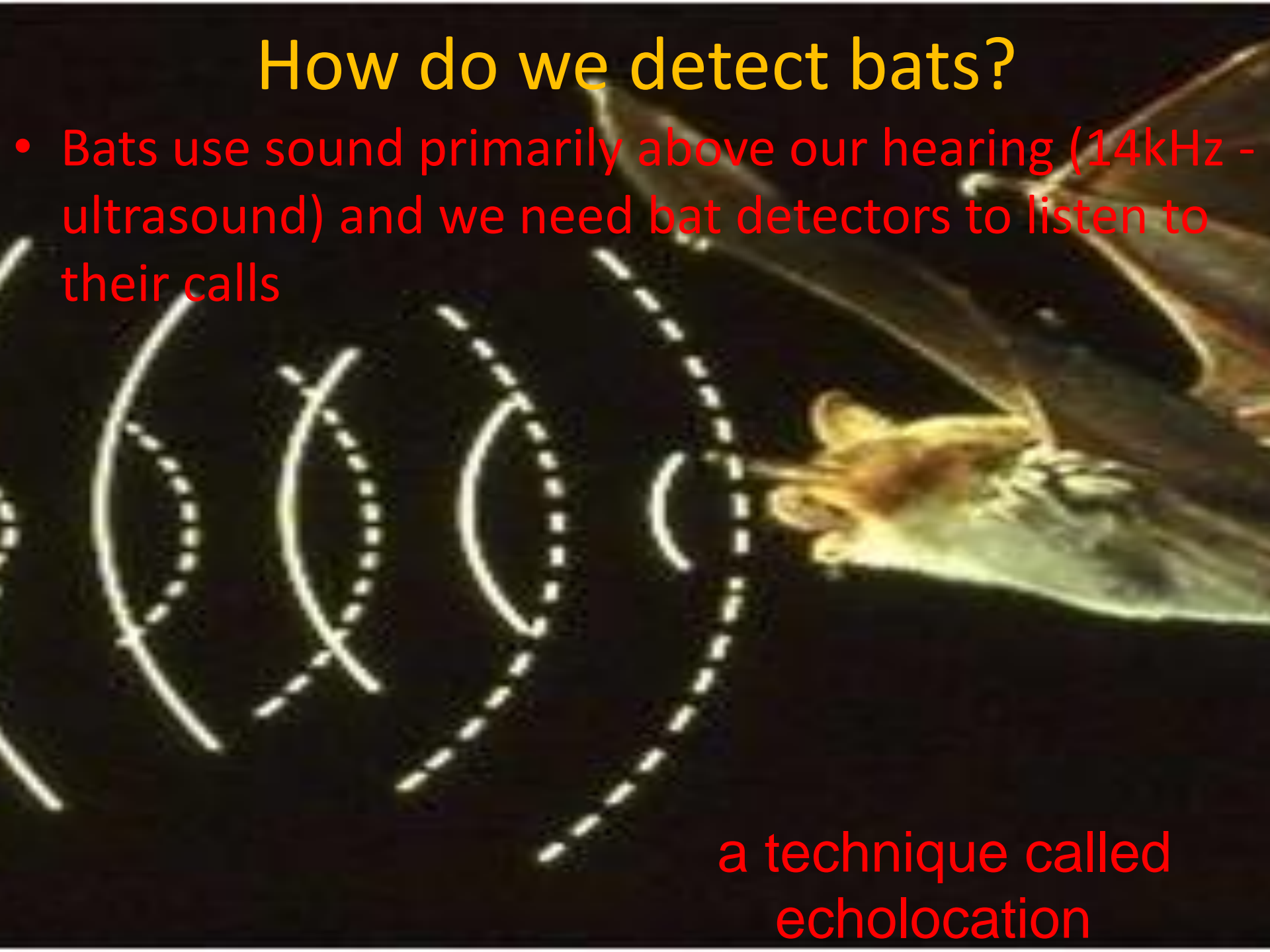
Brown Long Eared Bat



- Very secretive
- Woodland species

How do we detect bats?

- Bats use sound primarily above our hearing (14kHz - ultrasound) and we need bat detectors to listen to their calls



a technique called
echolocation

**TVWT/Cleveland Bat group use a combination
of three types of bat detectors to
make the most of surveying
opportunities**



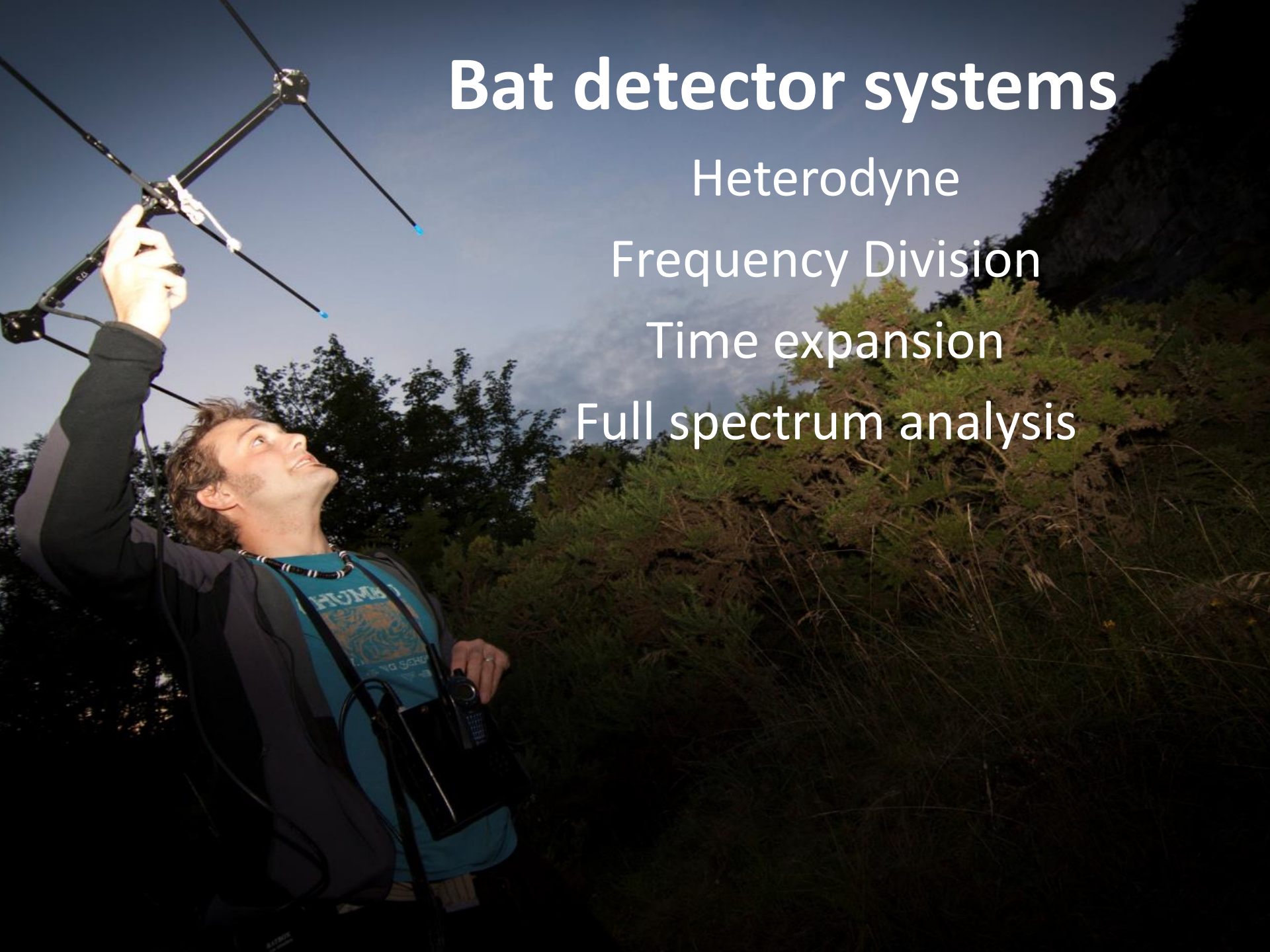
Bat detector systems

Heterodyne

Frequency Division

Time expansion

Full spectrum analysis



Heterodyne detectors

These are real time detectors where you can hear the bat but it does not record. Useful for instant detection, but no evidence to confirm what you have heard.

Tricky to use as bats do not vocalise at one frequency (they are not monotone).

Good to make detections and confirm bat presence but can be difficult to confirm species.



Using a Heterodyne bat detector

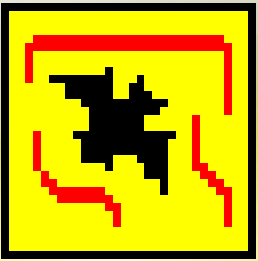
- Can only tune into one frequency at a time
 - Miss other species

- Understand habits of the bat species you are likely to see. NBMP training.

- Understanding the sound and pitch of a call

- Understanding the repetition rate of a call

- You can still hear the sounds from another bat. They vocalise at a wide range of frequencies. Only at it's peak frequency will you hear the proper call of the bat (but how do we know what that should sound like?....local accents!)



Anabat and Analook

Anabat is the detector
Frequency Division detector



Analook is the software
AnalookW is about viewing, analysing and
managing data from Anabat Bat Detectors.





Frequency division

These are real time detectors that record detections, however you cannot hear the bat.

Divide the incoming frequencies, normally by ten, thereby bringing the sounds within the human hearing range (e.g. 50 kHz becomes 5 kHz). However this means that the sound file is recording only one tenth of a second every second. So quality of the whole sound recorded is reduced, making the sonograms less clear. Cannot always determine the species

More information can be collected including GPs position



SM2 and Audacity

SM2 is the detector

Full Spectrum/Time Analysis
Frequency Division detector

Audacity is the software

It is used to view and analyse the data



Full spectrum analysis

They sample at very high rates = good quality sound capture....more like high res tv! Enables the detector to capture all signal information, handy when bats vocalise so quickly and at such a high frequency that we cannot hear it.

The acoustic files enable a very detailed analysis of the sound and a clearer sonogram when compared to frequency division.

Tricky to use and set up. Uses up a lot of computer space. Need multiple large SD cards for saving data if leaving the detector out for many nights.

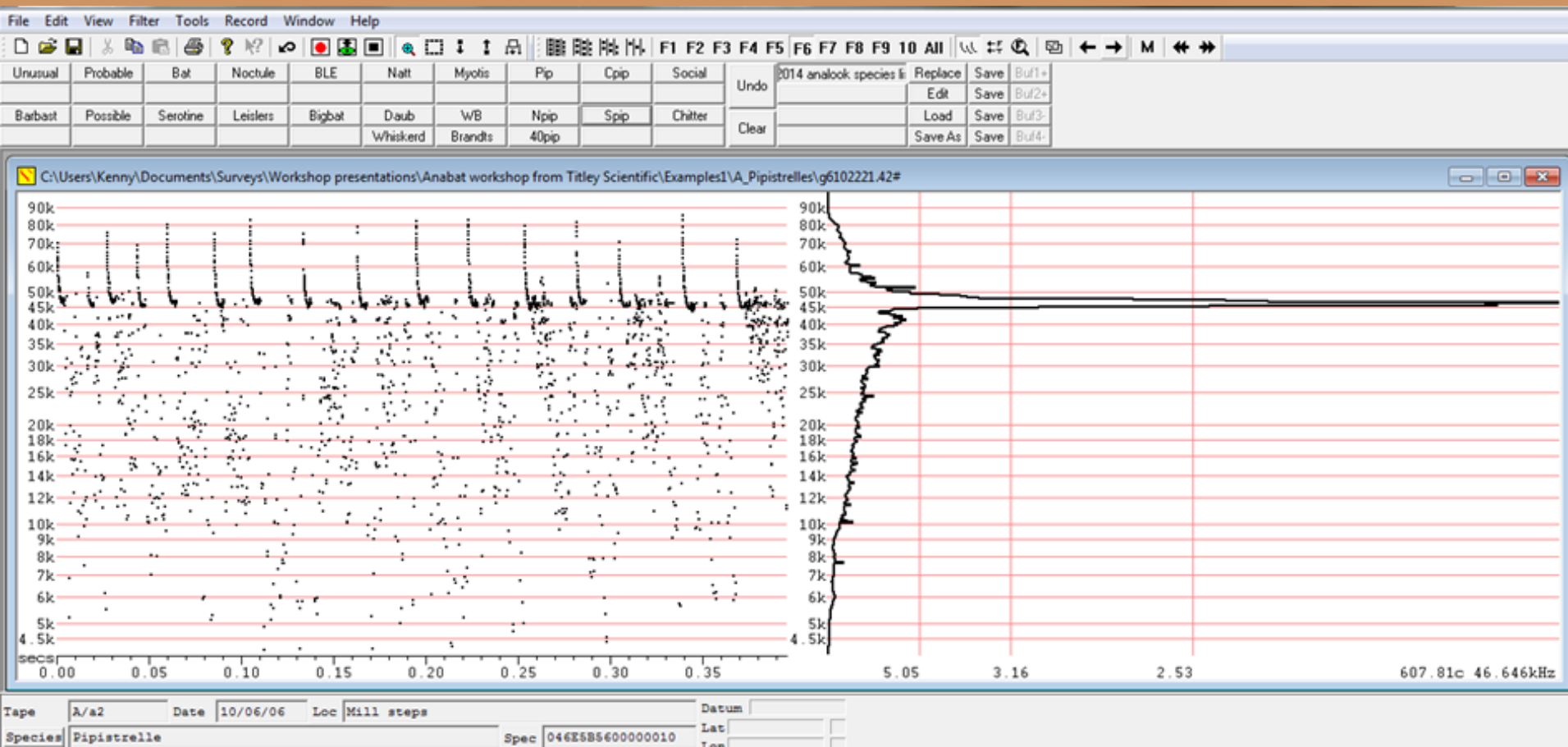
Generally more expensive than other detectors.

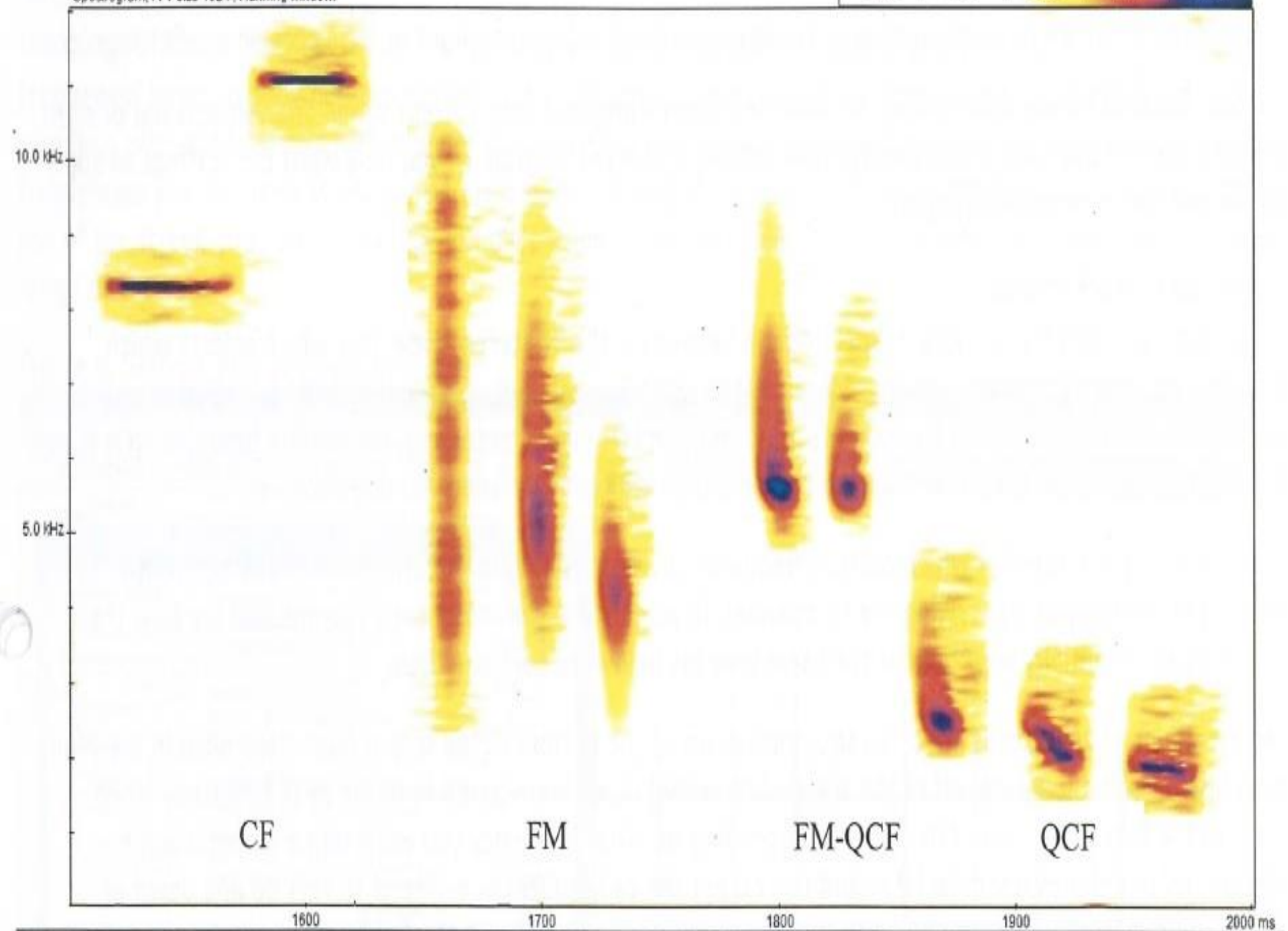


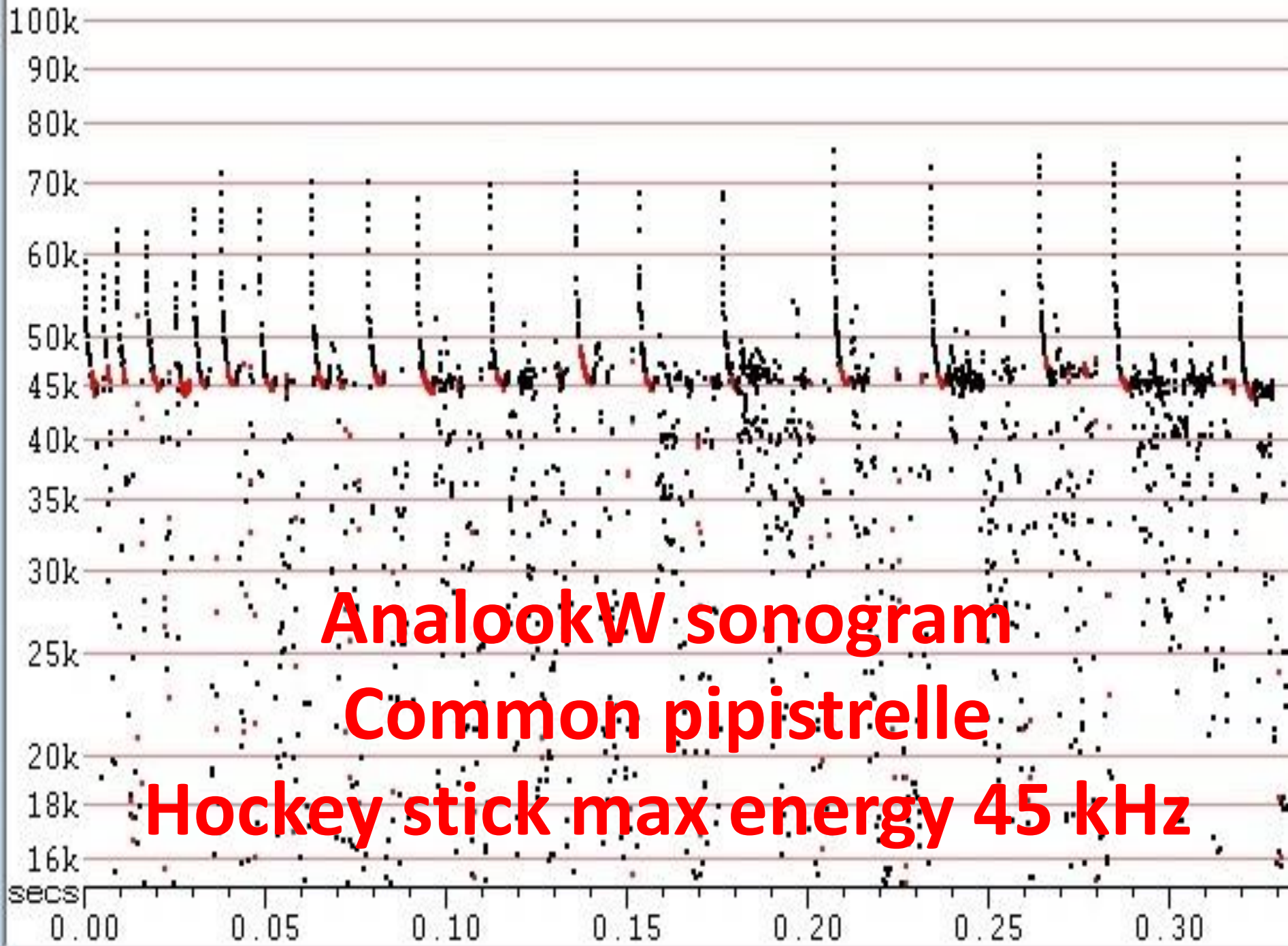
Use of (Animal) Bio Acoustics

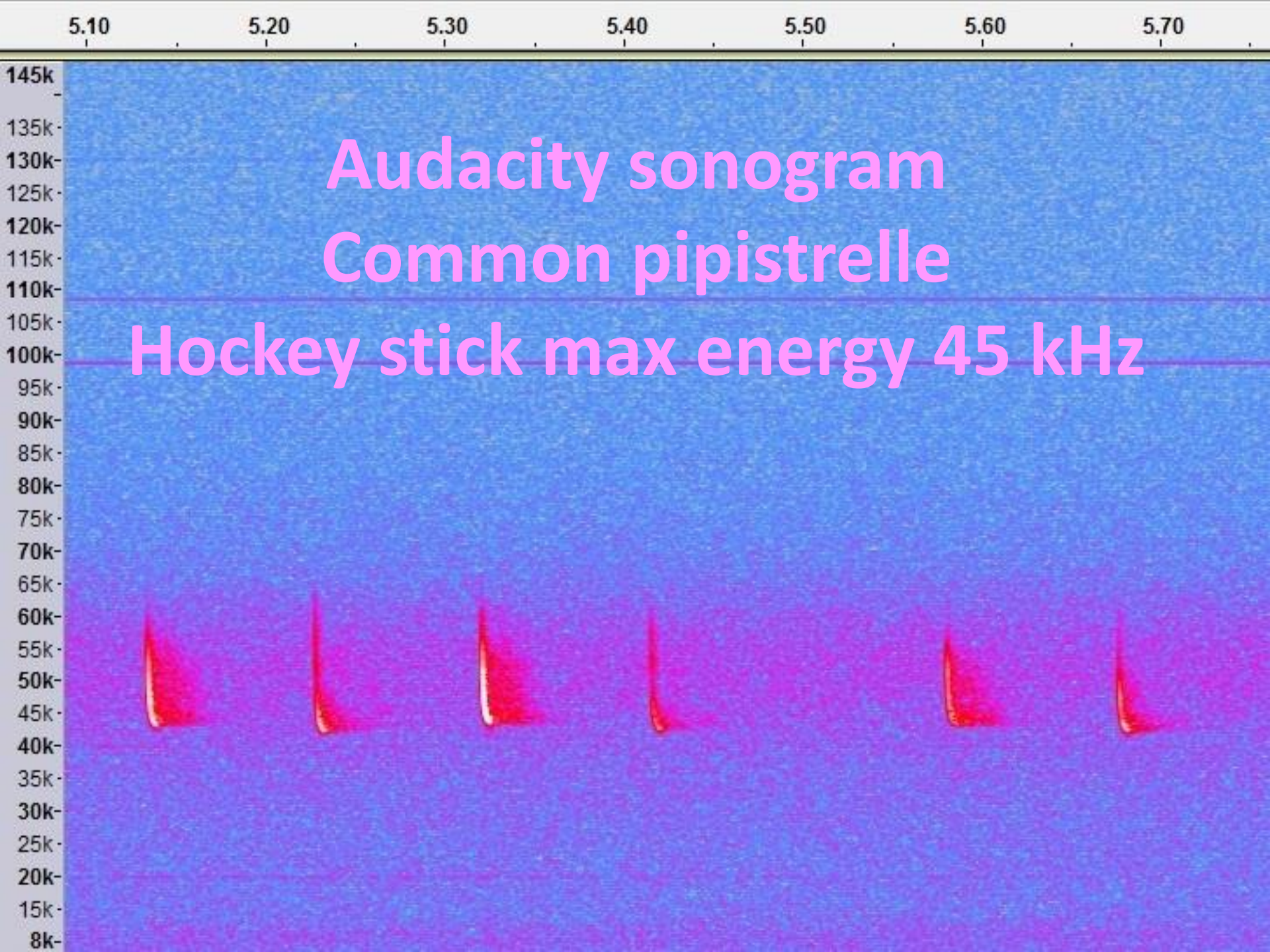
Using Bat data software packages

We use 2 types of software alone for Bio-acoustics.









How to survey for the Cleveland Bat group and Wings of the Tees project

- Using Heterodyne and Anabat
- Look at where you are surveying beforehand. Do a recce before if you are not familiar with this area.
- Always go out with someone else
- Weather conditions: Dry, wind less than 10mph, temperature above 8 degrees.
- Start your survey at sunset.
- Plan to be surveying until at least 2 hours after sunset.
- Simply walk/cycle/drive at 20mph along transect

How to survey for the Cleveland Bat group and Wings of the Tees project

- Using SM2 detector
- Pick a spot and make a note of where it is. Take a gps position or OS map co-ordinates. Or postcode
- The detector should be left for a minimum of 3 nights
- Good to go and check the detector is ok after first night of data. Security. Battery.
- Check weather will be ok for the next 3 nights if you are only leaving for 3 nights.

What happens to the data?

- Analysed
- Checked over (QC'd)
- Entered into spreadsheet
- Data passed on to Wings of the Tees project....ERIC
- OR Cleveland Bat group..... Hopefully in the future provide us with some means of raising funds to pay for bat care expenses...bat boxes, kit for surveys etc.



**Environmental Records
Information Centre**
North East

Picture use

Thank you to:

- Bat Conservation Trust
- Tom Marshall

www.clevelandbats.org

