

# Bat Detecting

How do we study something that only comes out at night?

DEVON  
GREATER  
HORSESHOE  
BAT PROJECT



© John Kaczanow

Securing  
a future  
for Devon's  
nocturnal  
wonder



# How do bats get around in the dark?

DEVON  
GREATER  
HORSESHOE  
BAT PROJECT



© Phil Richardson





# How can we record bat sounds?



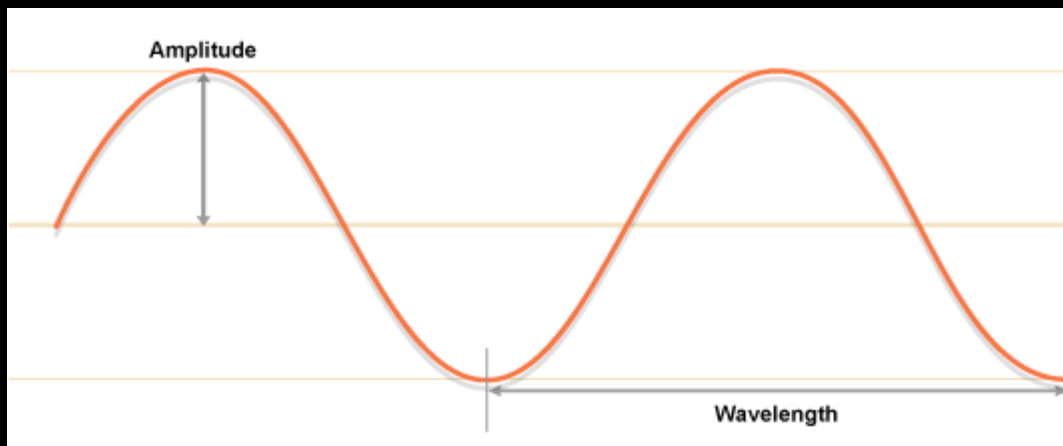
# How do we measure a bat sound?

The frequency of a sound wave is;  
the number of waves produced by a source each second &  
the number of waves that pass a certain point each second.

The unit of frequency is the hertz (Hz). For bats high  
frequency calls we use kilohertz (kHz),  $1 \text{ kHz} = 1,000 \text{ Hz}$ .

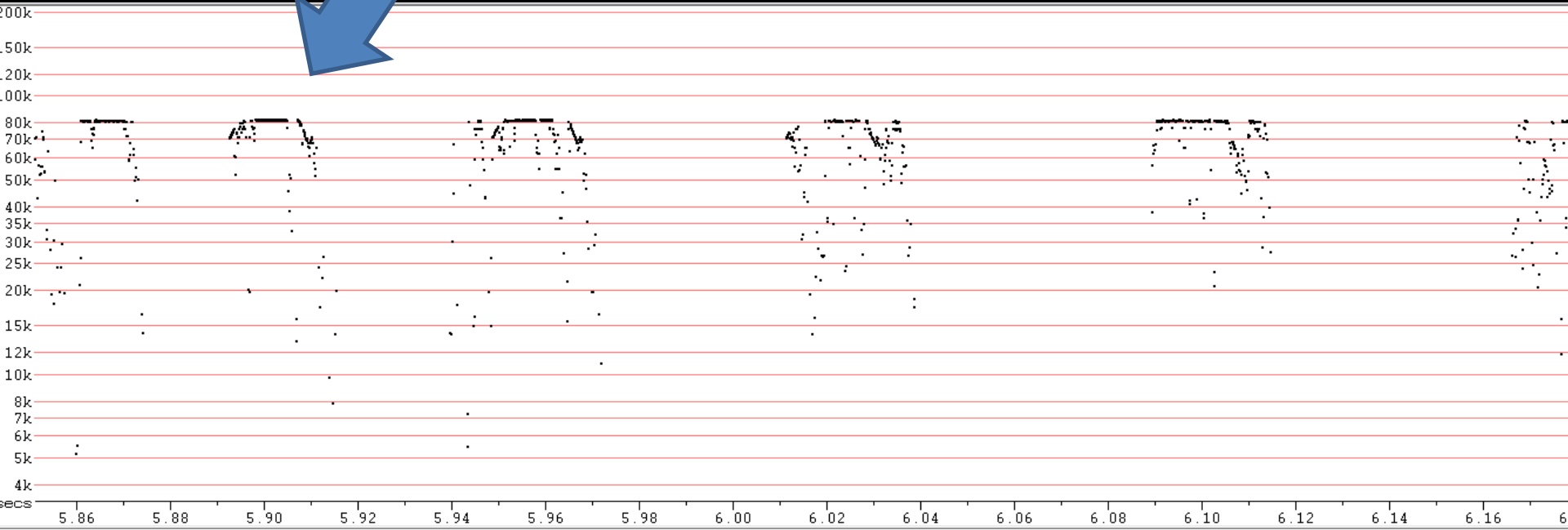
Most people cannot hear a high-pitched sound above 20 kHz

A greater horseshoe bat echolocates at 80 kHz, this means  
they emit about 80,000 sound waves per second!



# Sonogram of a greater horseshoe bat

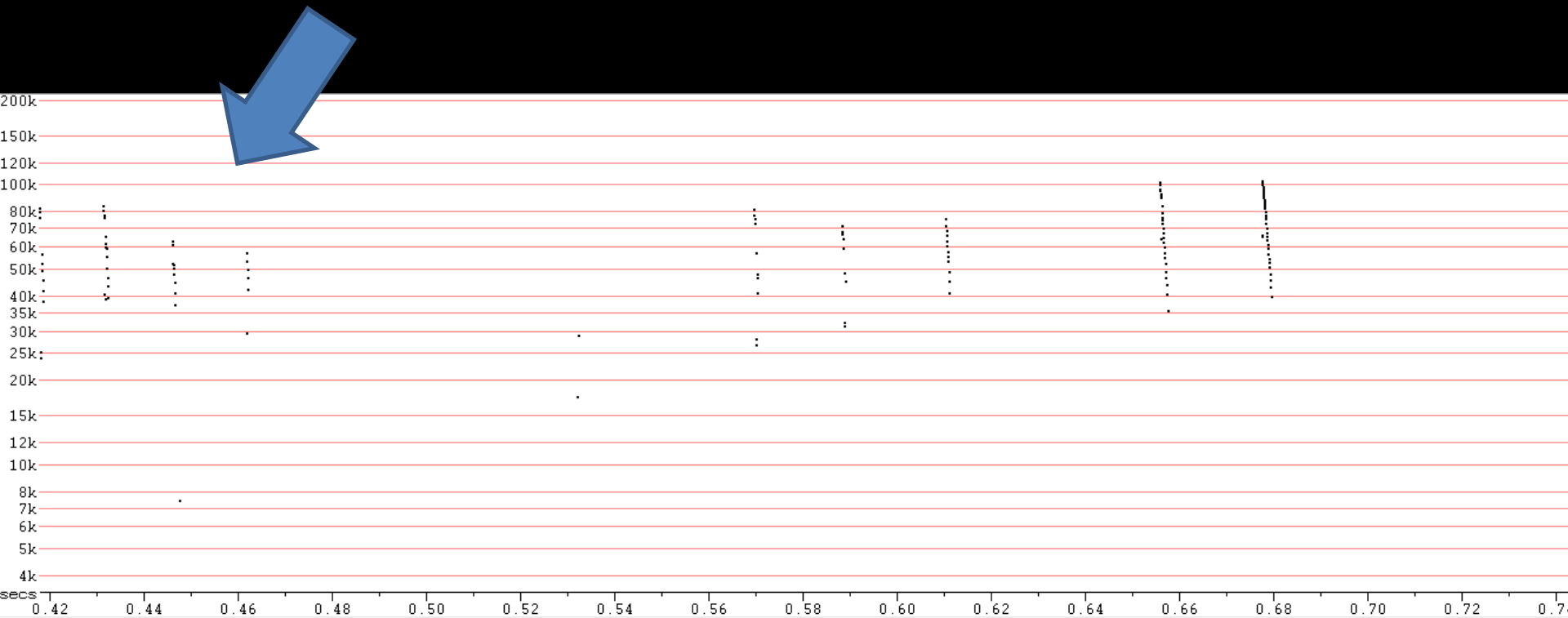
80 kHz – staple shape



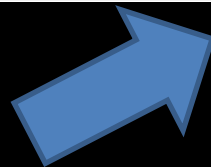
Time in seconds

# Sonogram of a Bechstein's Bat

40-80 kHz – linear shape



Time in seconds



# Detectors can tell us.....

- if there is a roost is close by  
(e.g. if the calls are at sunset)
- If the bats are feeding (feeding  
'buzz')
- whether they are making social  
calls
- how many times a bat passes  
by



# Detectors can't tell us.....

- how many bats there are
- If they are they male or female
- how old they are
- If they are healthy
- what the bats are feeding on





# How can we find out more ?

- bats are a protected species, so you are not allowed to disturb them !
- but licensed bat workers are allowed to enter roosts and carry out other survey work



Paul Kennedy

# How can we find out more ?

- check roosts to count numbers – emergence counts in the summer months
- use roost cameras to help track pup numbers
- count numbers of young bats
- catch and ring bats – this tell us about age, sex, health, whether it has been caught before
- Monitor condition of roost itself e.g. temperature and humidity





Bats –  
fascinating  
but difficult to  
study!