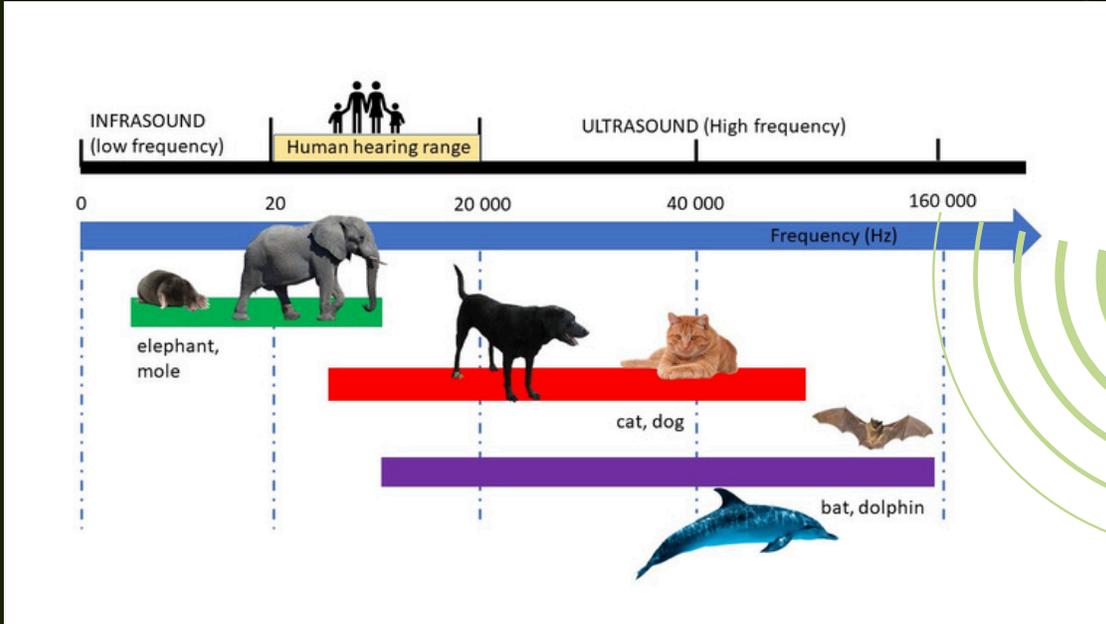


QUICK START GUIDE

Why do you need a bat detector to hear bats?



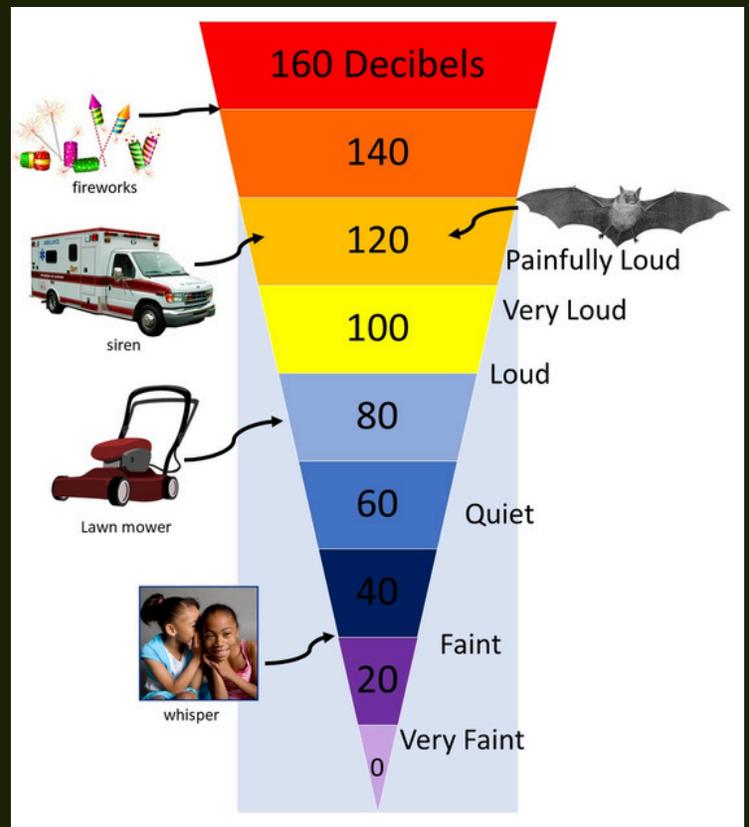
Bats echolocate using high frequency sound that is well above the human hearing range. We cannot hear them (but dogs and cats can hear bats)!



What is echolocation?

Bats **“locate”** objects in space by listening for the returning **“echoes”** from their extremely **loud calls**. Bats are as loud as the siren of an ambulance (but we can't hear them with our ears). Simply put, they yell a lot and they **“see”** things with sound.

Bats can sense different **textures** of insects and predict how fast a bug is moving while at the same time navigating to **avoid colliding** with trees or other objects.



QUICK START GUIDE



Echometer Touch



The “Echo Meter Touch 2” unit plugs into a tablet or phone. It is a microphone capable of detecting the high frequency sounds that bats make. Devices need the **free “Echo Meter Touch Bat Detector” app** for the unit to function. Using the device and app, you will **hear** a modified version of bat’s echolocation calls, and **see** a visual representation (**spectrogram**) of this sound.

Connecting the Microphone

Simply install the free app and then plug the microphone into the USB-C port of your mobile device (or provided tablet) and you are ready to detect bats.

Recording and Identifying Bat Calls

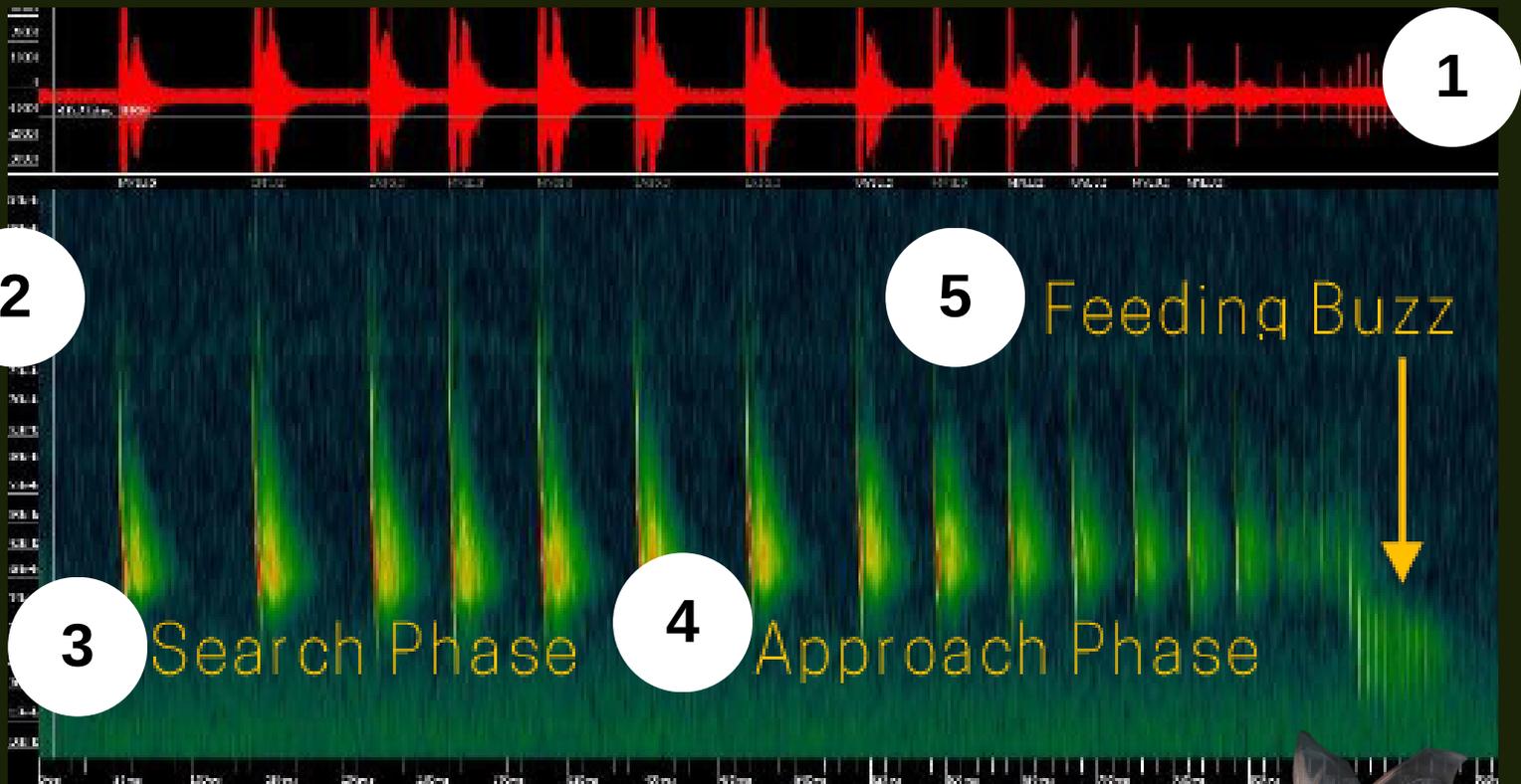
- Set up “Auto ID Selection” in the settings menu (select the hamburger icon in the upper left corner). Set it to ‘North America’ and then select ‘Alberta’.
- Tap the red RECORD button to record for up to 15 seconds (per detection event).
- The unit compares the file with a library of calls and displays a potential match (manual analysis by a bat expert may be needed for accurate species ID).
- Record species in a field notebook with location and observations.
- If you are using your own mobile device, consider submitting a few of your best observations to iNaturalist

The screenshot shows the app's 'LIVE MODE' interface. At the top, there's a recording timer showing '00:01:10'. Below the timer is a red waveform representing the recorded sound. A pop-up window displays a list of potential matches, including 'Silver-haired' (*Lasiurus b. v. flavivagans*) and 'Big brown' (*Eptesicus fuscus*). A 'CHOOSE ID FROM LIST' button is visible. The bottom of the screen features a control bar with a red 'RECORD' button, a microphone icon, and a 'STOP' button. Callouts on the right side of the image point to these features: 'Recording timer', 'Auto-ID pop-up', 'Pulse count', 'Click to label recording with alternate bat', 'Learn more about bat species', 'Label recording with another species of bat', and 'Triggered recording and/or manual recording'. A callout on the left points to the hamburger menu icon in the top left corner.

Troubleshooting: If the app stops working or stops producing sound, try exiting the app, or disconnecting/reconnecting the module and start the app again. If this doesn't work, disconnect the unit, turn off the tablet and restart.

QUICK START GUIDE

Understanding Bat Detector Outputs



1 The red section shows sound amplitude. It is a graph of how sound energy (i.e., loudness) changes with time.

2 In the spectrogram, frequency in kilohertz (kHz) is measured on the vertical axis; time in milliseconds (ms) is measured on the horizontal axis. Amplitude is shown as colour: red/yellow depicts sound with very high energy; green depicts sound with lower energy.

3 Bat calls appear as separate lines repeating across the screen. They may be vertical or horizontal lines or look like backward "J"s". Search phase calls are typically evenly spaced apart. Distorted-looking sound is typically caused by reflections (echos).

4 Bat calls will appear closer together in the "approach phase" once bats detect an insect in the distance.

5 On attack, bats reduce the energy in each call and make a rapid fire series of calls to maximize the information returning to them regarding the size and texture of the insect, distance, and direction it is travelling. This is known as a "feeding buzz".

You should be able to hear each echolocation call and the feeding buzz in the LIVE MODE. Click the RED record button to enable the AUTO-IDENTIFICATION mode when you are listening for bats. You can find full operational tutorials for the device at www.wildlifeacoustics.com

QUICK START GUIDE



Species Identification

Species identification is based on ideal search phase calls. When listening for bats, you may record partial calls, social calls, feeding buzzes or calls that are poor quality. The auto-ID program will still try to identify each bat species (but it might not get it right).

If you see TWO photos of bats pop up when the program is attempting to identify a bat species, the top photo is the “best” match and bottom is second best match. Your device should be preset to only look for bats found in Alberta.



Echometer App

The Echometer App will display an “i” for information beside each bat photo. Click to learn more about each species.



PLEASE PROVIDE FEEDBACK ABOUT YOUR EXPERIENCE USING THE BAT KIT!

www.albertabats.ca/batkits



**ALBERTA COMMUNITY
BAT PROGRAM**

© Cori Lausen

© Jason Headley