

# North Somerset Bat Survey

## 'Bush-cricket kit' Lithium-Ion Lid Battery Guide

(May 2024)

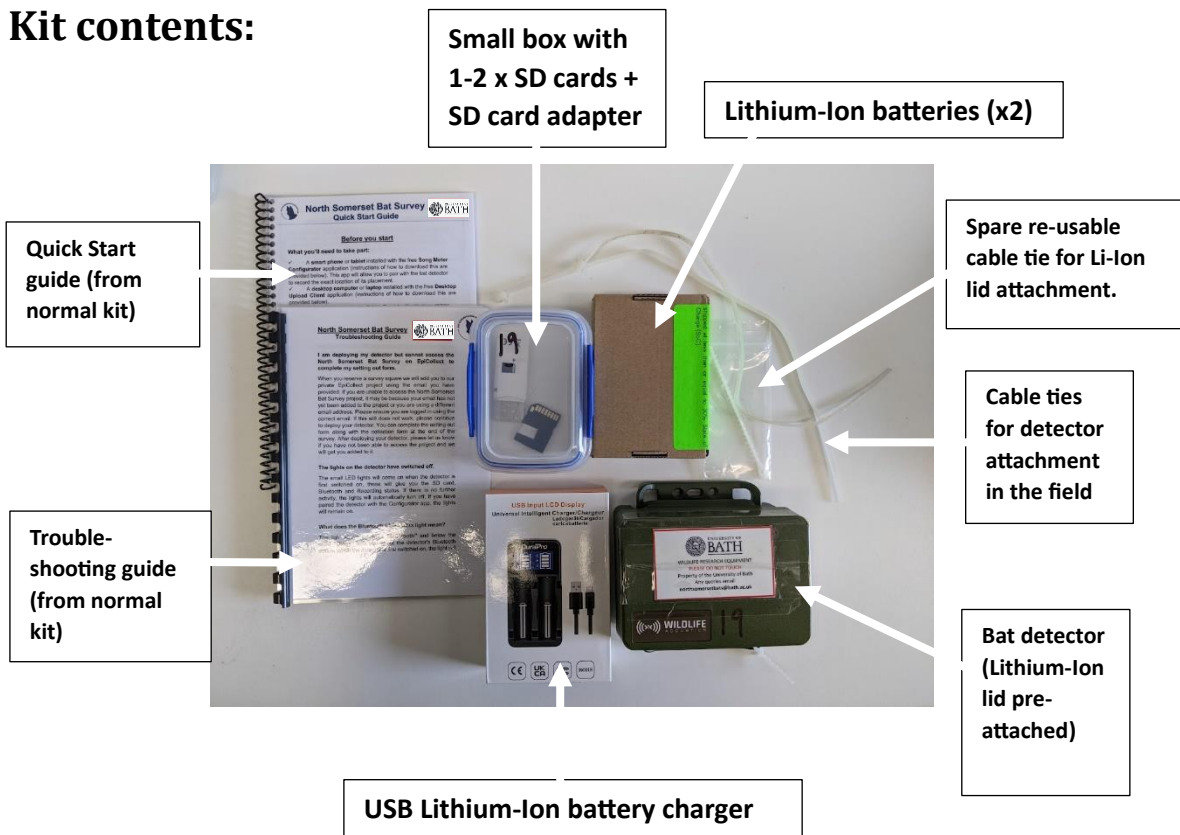


This guide accompanies the 'bush-cricket kit' for use by experienced volunteers. It is designed to survey sites with high volumes of bush cricket activity, which would quickly drain standard rechargeable AA batteries within the six-night survey.

Wildlife Acoustics (the manufacturer of the Song Meter Mini bat detector) provide a Lithium-Ion (Li-Ion) battery lid that can accommodate up to six rechargeable 18650 Lithium-Ion batteries for extended deployment times. Using six 18650 batteries, we expect up to 1,100 hours of continuous sonic recording or up to 100 ten-hour nights of triggered ultrasonic recording. The 'bush-cricket kit' provides **two** batteries allowing for, in theory, up to 33 ten-hour nights of recordings.

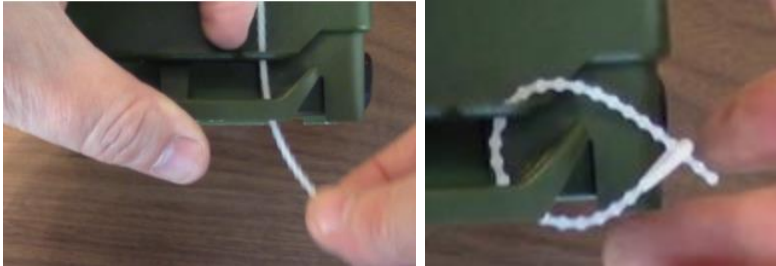
The 'bush-cricket kit' comes with the bat detector pre-attached with the Lithium-Ion battery lid. Your detector hosting centre will have a standard kit available to use as a replacement if you do not wish to use the 'bush-cricket kit'.

### Kit contents:

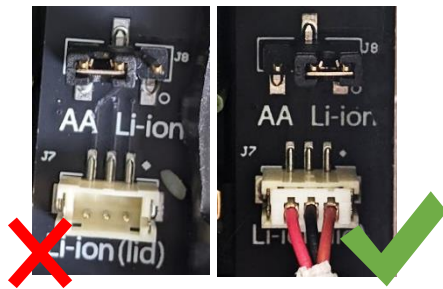


To operate the kit, please do as follows:

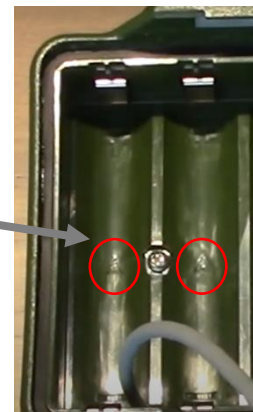
1. Familiarise yourself with the 'Warnings' on the next page.
2. Ensure the small cable tie is connected to both the lid and main detector, this is to minimise strain to the wire connecting the lid to the main detector.



3. Connect the USB Li-Ion battery charger to a USB port in a PC/Laptop or using a USB-mains adaptor.
4. Using the USB Li-Ion battery charger, ensure that all batteries are charged fully and equally before use. **If you are the first user, the batteries will not be fully charged.**
5. Ensure the black power jumper block and white lead are connected the Li-Ion pins. The white lead should be tucked under the metal bracket.



6. Insert the two Li-Ion batteries into position A in the lid.
7. Remove any AA rechargeable batteries if present.



8. Carefully place the lid on the detector, ensuring the wire is not pinched.
9. **Click the lid in place - triple check this!** This is to ensure the waterproof seal is intact.
10. Follow the survey instructions provided in the Quick Start Guide as normal and deploy your detector.
11. When you have finished your survey, please remove the Li-Ion batteries and **re-charge them.**
12. Either protect the batteries and terminals by covering them with insulative, non-conducting electrical tape or by storing each battery separately in a plastic bag (provided).

Wildlife Acoustics provide a handy video to accompany these instructions:

<https://www.youtube.com/watch?v=b0bP7FLPcQE>

**Need help?** Email: northsomersetbats@bath.ac.uk

## Warnings

Upon receipt and prior to every use or storage, inspect each battery for damage. **DO NOT USE OR STORE** the battery if you see **dents or tears** to the battery's surfaces because such damage may have compromised the battery's internal protection. If this is the case, please alert immediately the North Somerset Bat Survey Project officer: **northsomersetbats@bath.ac.uk**

Lithium-ion batteries may explode or burn due to improper use. Using these batteries for purposes not intended by the manufacturer may cause severe injury and damage. Neither the North Somerset Bat Survey nor Wildlife Acoustics is responsible for any injuries or damage caused by lithium-ion batteries.

**Use at your own risk.** Please read and follow these warnings:

- Never completely discharge batteries (below 2.5V under load or 3V unloaded)
- Charge fully (to 4.2V) before first use
- Never charge batteries to 4.3V or above
- Do not charge unattended.
- Do not store your li-ion batteries fully charged for an extended period of time (weeks or more)
- If you must store your battery, only store in a case or individual box in a cool and dry place at approximately 3.6-3.7V
- Use only high-quality battery chargers.
- Do not expose to heat.
- Do not connect the positive contact to the negative contact without an appropriate load.
- Never exceed the battery's specifications
- Never try to charge or discharge li-ion batteries with battery chargers that are not made for li-ion batteries.
- Always charge these batteries on and within fireproof material
- Never leave rechargeable batteries in a recharging station unattended
- Do not use any rechargeable battery or charger if any visible damage is present, or if known mishandling, accidental or otherwise, has occurred.
- Always store and transport rechargeable cells in a safe, non-conductive container (never keep a spare battery loose in a pocket, purse, etc. and always use protective cases)
- Properly dispose of all battery cells and chargers in accordance with local laws and mandates (if you're unsure, contact your local municipality)
- If a rechargeable battery overheats, hisses, or bulges, immediately quarantine the battery from any combustible materials - ideally, take the battery outside.
- If a rechargeable battery catches fire, Wildlife Acoustics recommends pouring water on the battery and surrounding areas - ideally, use a foam extinguisher to quell the fire.

Source: <https://www.wildlifeacoustics.com/uploads/user-guides/Lithium-Ion-Battery-User-Guide.pdf>

## Specifications

- Max Continuous Discharging Current: 10A
- Typical Capacity: 3500 mAh (3350mAh minimum)
- Style: BUTTON top
- Approximate Dimensions (including button): 69.1mm length x 18.6 mm diameter
- Discharge cut-off voltage: 2.5V (approximate)
- Voltage: 3.6V
- Full Charge Voltage: 4.2V
- Charge Current: 1.675A standard
- Protection Cutoff Current: ~20A
- Protection IC: Ricoh R5478N101CD
- MOSFETS: FNK10N25B (Quantity 3)
- Origin: Cell made in China or Japan, button top manufactured in China, Protection IC made in Japan
- Cell Certifications: UN38.3 test report, IEC62133, CB Scheme, UL1642
- Battery Assembly Certifications: UN38.3 test report

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