

Bioacoustic Data Collection Protocol

Adapted from fieldwork protocols developed by the Koa team for the 2025 Experiential Introduction to AI and Biodiversity course, in collaboration with NEON, ABC Center, and Imageomics.

Pre-deployment Preparation

- Format SD cards in camera traps before deployment
- Label SD cards and camera traps with unique IDs
- Charge batteries and pack spares
- Access Jotform for data entry: Bioacoustic Data Form, with a paper backup

Field Protocol Overview

Equipment per deployment: - Song Meter bioacoustic sensors with paired SD cards - Zip ties for mounting to fence posts and trees - Field notebook and pencil

Site Setup

Site Selection

- Place Sound Meters to capture diverse acoustic environments
- Mount at eye-level (approximately 5 feet) on fence posts or trees using zip ties
- Ensure microphone points away from prevailing wind direction
- Avoid areas with excessive mechanical noise (roads, equipment)

Configuration

- Check batteries and micro SD card inserted
- Slide the **ON/OFF** switch to **ON**
- Open the Song Meter Config app on your device
- Press and hold the **PAIR/STATUS** button for 3 seconds. The Bluetooth LED will blink green, indicating the recorder is ready to pair with the app. In the Song Meter Configurator app **Recorders** screen, the **Pair** icon will be displayed next to the Song Meter Micro 2.
- Tap the **Pair** icon. The icon will turn green, indicating successful pairing. A pop-up message will appear asking if you want to set the recorder's time zone to your mobile device's time zone.
- Tap **Yes**. A pop-up message will appear asking if you want to set the recorder's location to your mobile device's location.
- Tap **Yes**. Tap the **Configure** icon for the paired Song Meter Micro 2 in the **Recorders** screen. The Configuration Editor screen is displayed.
- Select a preset recording schedule from the dropdown menu (see table below) and make any desired settings changes.

Refer to Song Meter app for detailed instructions.

Song Meter ID	Recording Schedule
SM01	Record birds/frogs from sunrise to sunset
SM02	Record birds/frogs from sunset to sunrise
SM03	Record birds/frogs 5 minutes every hour 24/7
SM04	Record birds/frogs 5 minutes every hour 24/7

Initial Deployment

- Pair with the Song Meter Micro 2 to update its internal clock. If desired, accept the prompts during pairing to automatically set the recorder's time zone and deployment location to match your mobile device.
- Check the recorder's Status screen. Resolve any SD card error messages you see on the Status screen.
- Unpair from the Song Meter Micro 2.
- Latch the Song Meter Micro 2 shut, making sure the battery tray ribbon or debris does not block the enclosure from sealing.
- Mount and secure the recorder. Tie orange flagging tape to indicate the location of the recording device.
- The Song Meter Micro 2 automatically runs its recording schedule while it is turned on.

Data Transfer & Storage

1. Immediate Processing:

- Transfer SD card data to secure storage upon return from field
- Verify file integrity and completeness
- Update metadata spreadsheets
- Format SD cards for next deployment

2. Data Backup:

- Maintain multiple copies of all data
- Follow institutional data management protocols
- Regular backup verification

3. Quality Control:

- Review sample of images/recordings for equipment function
- Note any issues with specific Song Meter
- Schedule maintenance as needed

References

Song Meter Micro 2 User Guide

This protocol should be reviewed and updated based on site-specific conditions and research objectives at The Wilds.