Sounds of Nature Citizen Scientist Field Guide

Overview

Welcome and thank you for participating in Sounds of Nature! Sounds of Nature is a citizen science project studying changes in biodiversity through soundscapes. As a citizen scientist, you serve an essential role by contributing data that can be used by wildlife researchers and ecologists. We hope that Sounds of Nature can improve wildlife conservation and management in our region as well as identify areas that are experiencing significant declines in biodiversity.

Sounds of Nature uses sound recorders called AudioMoths (sometimes called "acoustic recorders") to record *soundscapes* – the collective sounds emanating from a place - across our region. The AudioMoths will be set to record two, 4-hour periods every day - one starting around dawn and one starting around dusk. We ask volunteers to keep the AudioMoth out for 5 days following deployment (more details on deployment below!).

What's in the package:

- 1x AudioMoth sound recorder
- 1x cotton camouflage bag
- 1x waterproof plastic bag
- 5x black zip ties
- 1x desiccant (moisture absorption)
- 1x MicroSD card (already inserted into AudioMoth)
- 3x AA Lithium batteries
- 1x field datasheet
- 1x deployment checklist

Contact Information:

Please email us if you are having any issues with deploying the AudioMoth
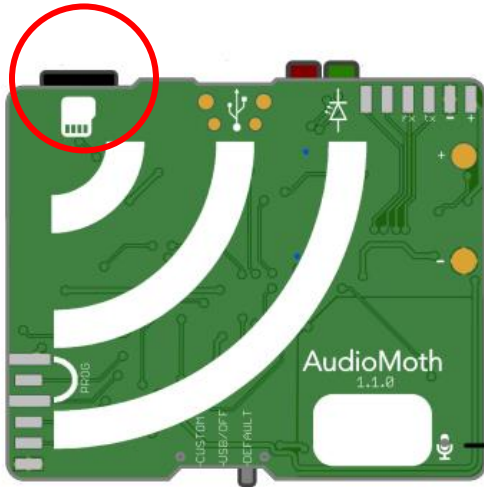
Website: peaselab.com/sounds

peaselab.com/contact

Email: bpease1@siu.edu

Phone: (618) 453 – 7474 or (618) 322 – 7722

Deploy the AudioMoth

1. **Prior to deployment, remove bubble wrap from AudioMoth and store in shipping package until returning AudioMoth.**
2. **Record <u>all</u> deployment details into the field datasheet**
3. **Check the AudioMoth**
   a. Check that all 3 AA batteries are firmly within the AudioMoth.
   b. There should also be a MicroSD card (memory storage) already inserted:

4. **Turn on AudioMoth by setting switch to *"DEFAULT"***
   a. Verbally record all field deployment details into AudioMoth
      i. Your Name
      ii. AudioMoth ID (number written in sharpie near microphone)
      iii. Month-Day-Year and Time of deployment
      iv. Location or Address of deployment
5. **Set AudioMoth to "*CUSTOM*"**
   a. This is the mode that the AudioMoth will stay in while deployed and listening. The AudioMoths will be set to record two, 4-hour periods every day - one starting around dawn and one starting around dusk.
6. **Check AudioMoth lights**
   a. The lights indicate whether the AudioMoth is programmed correctly.
   b. Good:
      i. If outside of the 4-hour recording windows (dawn and dusk): Flashing **green** light only
      ii. If within the 4-hour recording windows: Flashing **red** light only
   c. Bad: Solid **red** light with a flashing **green** light
7. **If solid red light is on in "*CUSTOM*" mode, you need to <u>set the clock</u> on the AudioMoth using the instructions below.**

a. Open the [AudioMoth Mobile App](#) on your phone (free download in all app stores)
b. Turn volume of phone to 3/4 full and turn off silent mode
c. Hold phone near the AudioMoth microphone and press 'Play Chime'
d. Press "play chime" until red light tuns off and only the green light is flashing.
    i. **NOTE**: this may require pressing the chime 5-15 times. Continue to Chime until red light is *off*.

8. Once only the green light is flashing, the AudioMoth is ready to deploy
9. Place AudioMoth within plastic bag (along with desiccant) and seal.
10. Place plastic bag within camouflage bag and attach to tree, pole, or fence 4-5 feet above ground with zip ties. Tree should be 5-6 inches in diameter.

a. IMPORTANT: ensure that the microphone symbol is visible in the bottom right corner of the camouflage bag. See picture below

11. **Place the AudioMoth in an open area**
    a. Try to place away from buildings or roads (15-20 feet)
    b. Try to place away from bird feeders (50-100 feet)
    c. Try to place in an open area where vegetation will not sound
12. **Retrieve AudioMoth <u>5 days</u> after deployment. Set a reminder, if needed!**
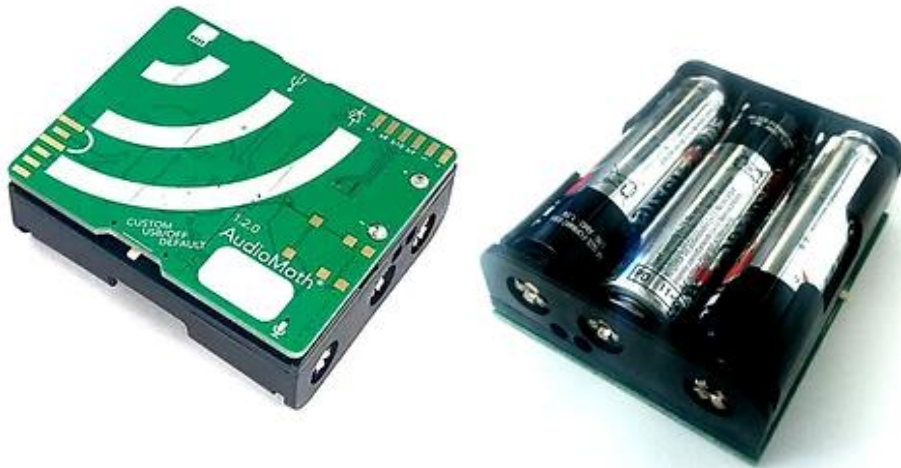13. **Open bag, set AudioMoth to "DEFAULT", vocally record Month-Day-Year and Time into AudioMoth, <u>then set to "OFF"</u>, place AudioMoth within plastic bag and SEAL.**

14. **Update the deployment datasheet with time and date of retrieval. Double check the datasheet for completeness.**
15. **Place all equipment <u>and </u>datasheet back into package that you received.**
16. **Place return shipping label *over* the existing label and send back to SIU.**

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Below are additional details about the AudioMoth. Everything you need to get going is mentioned above, but feel free to continue to read to learn more about the process.

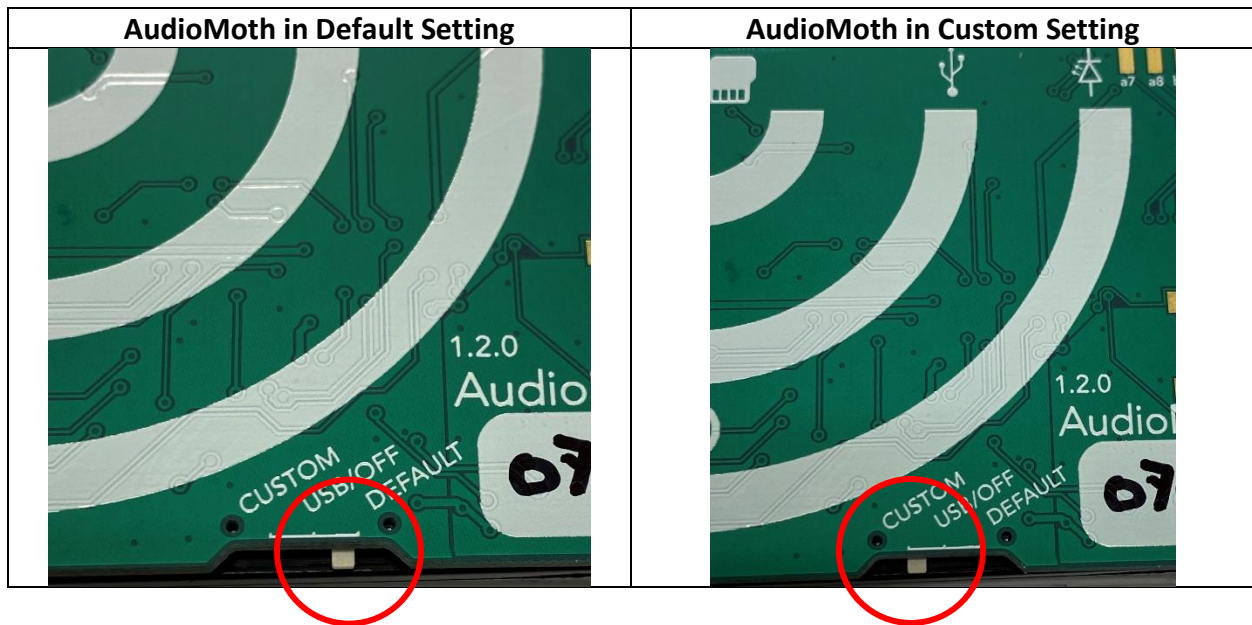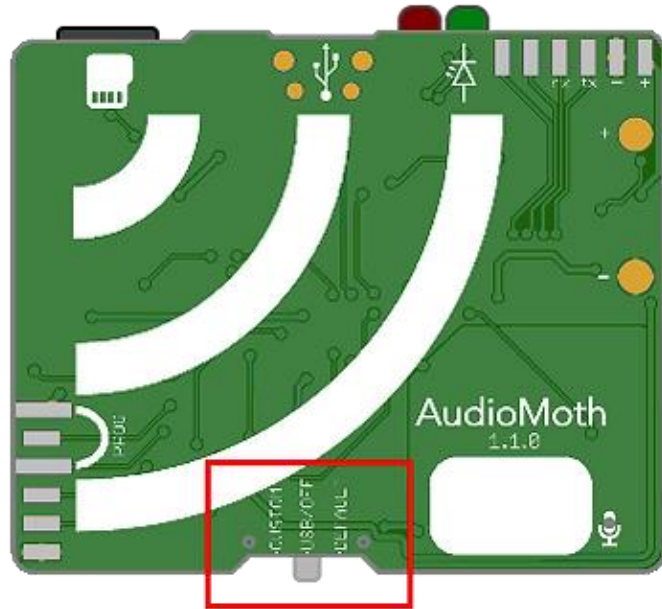## **AudioMoth Details**

The AudioMoth

AudioMoth is a low-cost, full-spectrum acoustic logger. Just like its namesake the *moth*, AudioMoth can listen at audible frequencies, well into ultrasonic frequencies. AudioMoth has a built-in microphone, runs on 3 AA batteries, and uses a microSD card to store audio recordings.
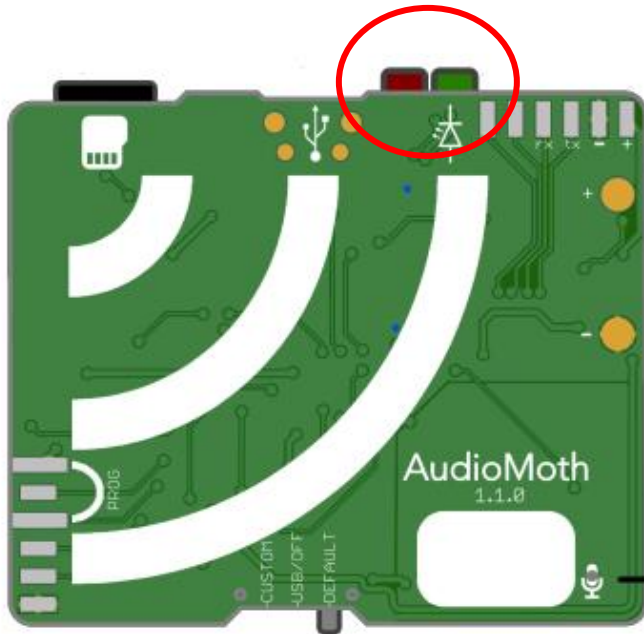
The AudioMoth has only **two** functions: *Default Recording* and *Custom Recording*, which are set by adjusting the switch in the red box to the right:

When set to the *Default Recording* function, the AudioMoth begins recording immediately and will record for 24-hours a day. This setting is *only* to be used when recording vocal field notes about the deployemnt (see below).

The *Custom Recording* function is the setting that needs to be used for Sounds of Nature. We have programmed the AudioMoth to record two, 4-hour periods – one starting at dawn and one starting at dusk. **The *Custom Recording is the setting that should be used for Sounds of Nature.***

AudioMoth in Default Setting	AudioMoth in Custom Setting

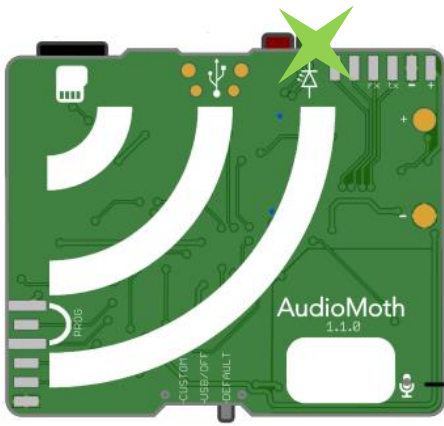The other feature of interest is the status light indicators:

The lights provide important information on whether the AudioMoth is programmed correctly. When in *Custom* mode, you will see one of the following light statuses:

- Flashing **green** light only (Programmed correctly and ready to record)
- Flashing **red** light only (Currently recording)
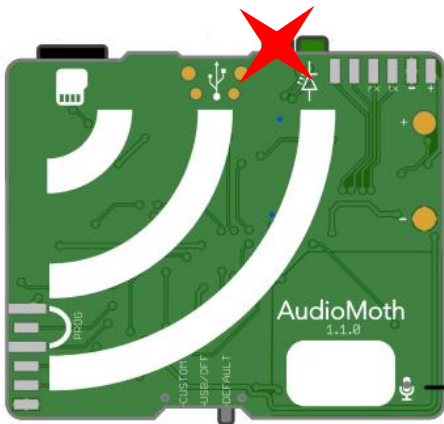- Solid **red** light with a flashing **green** light

If you see the Solid **red** light with a flashing **green** light this means that the AudioMoth needs reprogrammed. To resolve this, you will need the AudioMoth Mobile App (free on any device) for your smartphone device. The AudioMoth app simply plays a chime that resets the time setting in the AudioMoth.

Important: it may take **5-15** chimes for the AudioMoth to update. Continue to play the Chime until the **red** light turns off and only the flashing **green** light remains.

Good to deploy:

Good to deploy and currently recording:

Needs programmed prior to deployment: