

## Acoustic Recording Unit (ARU) Deployment Protocol

- ARUs for the Forest management cluster: Wildlife Acoustics Song Meter Minis
- Single channel, light weight recorders with acoustic microphone



### Preparation before deployment

- Needs 4 AA batteries
- Place SD card in as shown



### Use this link to watch a video about programming the settings and features of the minis

<https://www.wildlifeacoustics.com/resources/video-tutorials/song-meter-mini/en/song-meter-mini-configuration-editor>

This video shows how to generally change the settings, however, please follow the below-mentioned settings for doing the ARU surveys.

We have also produced a separate YouTube video showing how to program the SM minis exactly as should be done for these surveys so please take a look at these too.

### ARUs will be set up using a smartphone to set date, time, time zone and location

- Need to download the **Song Meter Configurator App by Wildlife Acoustic, Inc.**
- Will work with most smartphones or tablets that have Bluetooth version 4.0 or later and run either iOS 10 or later, or Android 5.0 or later. Will not work with Android devices produced by Huawei



## **ARU Settings for Song Meter Mini**

1. Open the “Song Meter” App on your smartphone and turn on Bluetooth on your phone.
2. Press the “pair” button on the Song Meter Mini and hold it for ~4 seconds.
  - a. If using it for the first time look for the serial number of the song meter in the app.
    - i. If it was previously used on the phone, it would still be located in the app when you open it.
  - b. Click the “pair” button in the app to create a connection between the song meter and phone.
3. To adjust the settings, click “configure”.
4. Change the recorder name. Here we need to include the information: Site and last 5 digits of the song meter serial number e.g. nameofsite\_12345
5. Do not change any “acoustic settings”.
6. In the “location and time zone” settings, adjust the location and time zones accordingly.
  - a. Either in the field, if there is cellular service or location service at the site.
  - b. Or program this before leaving for the field.
    - i. Be sure that the map shows the correct area where the song meter will be placed.
7. Scroll down to the main settings window.
8. No need to set a delay start but you may turn the Bluetooth beacon option on to get status updates from the song meter if you wish.

9. Record data for 1 hour every morning the ARU is deployed (45 minutes before sunrise to 15 minutes after sunrise). Adjust the recording windows in the app so they resemble the following settings:

a. Start time		hours	minutes
b. Rise	-	00	45
c. Time Duty Cycle	= Always		
d. End time		hours	minutes
e. Rise	+	00	15

10. Check out the estimated battery and SD card life. Make sure the dates are as expected then at the top of the App save this configuration of settings, which will allow you to load them to other song meters before deployment.
11. Click the return button to return to your list of song meters at the front of the app after configuring the app.
12. Click on “status” to double-check storage and battery levels and click the return button to return to the front of the app again.
13. When you have completed the programming for the song meter, click “unpair”. The lights will turn off as the connection between the phone and the song meter has been disconnected. The lid to the song meter has a list of definitions for what the different lights mean when you click the “function” button on the song meter. At this point, the song meter should be properly programmed and ready for the next recording window.

## Notes

- If you make a mistake or want to double-check your settings, you have to start by pressing the “pair” button for 4 seconds again and pairing it with the Bluetooth of your phone.
- Song meters may be programmed the night before going into the field to save time in the field, but song meters must still be checked before leaving them in the field.

## **In the field**

At a survey location on the site, one mini should be deployed as following:

- 1) Drive a 5-foot metal t-post approximately 15-20 cm into the ground using a mallet.
- 2) Attach the mini to the posts using 2 or 3 zip-ties (or more if needed to secure)
- 3) Record GPS coordinates of the ARU once when first setting up
- 4) Double check that ARU is set to record correctly before leaving
- 5) All ARUs are waterproof so do not need to be placed in a bag/ undercover.

