

AE LAB: Listening & Tagging Guide

This is a comprehensive guide to beginning the listening and tagging process for the Acoustic Ecology lab, it will list the programs and methods we regularly use to document sonic events across our recordings.

Tools: Reaper (Digital Audio Workstation), Google Team Drive

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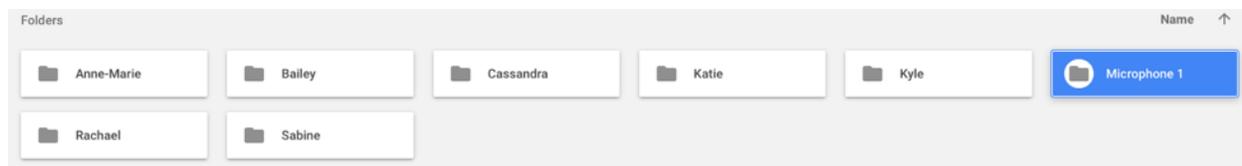
- A. Finding and Downloading Files**
- B. Reaper Installation, Setup and Listening**
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A. Finding and Downloading Files



1. **Access** the TeamDrive through your MyASU homepage, clicking “My Drive.” If you are reading this, you should have already been given editing access to the TeamDrive “Acoustic Ecology McDowell Tagging,” however if this is not the case, please email khoefer@asu.edu for access.

2. On the home page of the Team Drive you will see multiple folders and files. If there is not already a folder labeled with your first name, please **create one** by right clicking and adding a new folder.



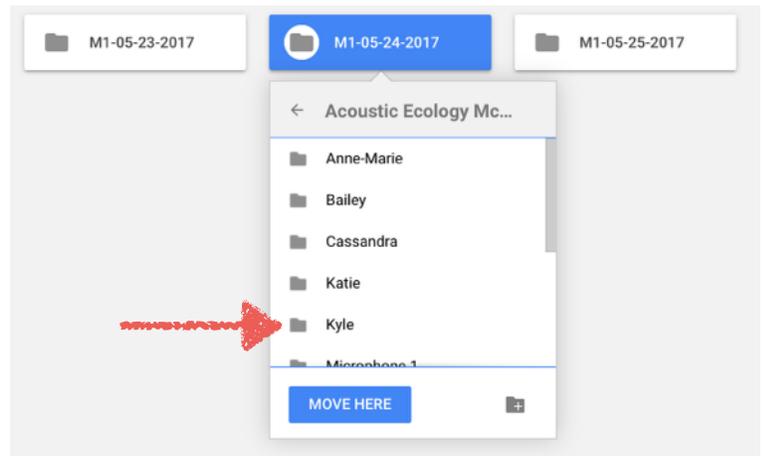
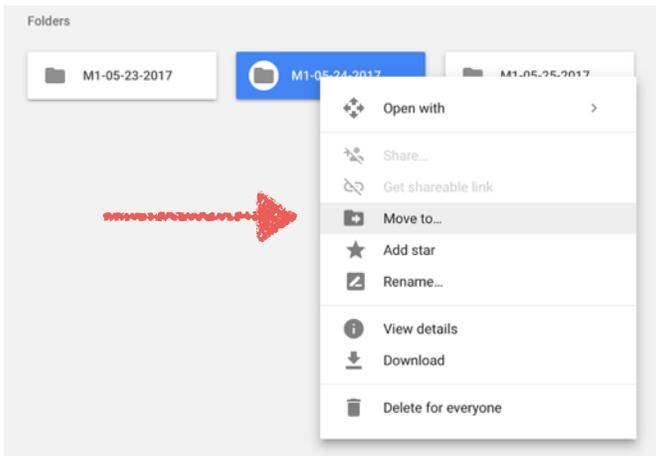
3. Audio which is ready to be tagged will be labeled under which microphone it was recorded with, this will range from Microphone 1, 3, and 4. The **folder hierarchy** is such

Microphone Number -> Date of Recording -> Audio File with Date & 24hr Time

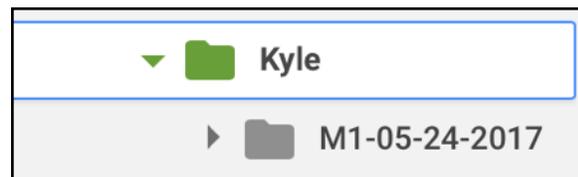
ex. Microphone 1 -> M1-05-26-2017 -> audio-solo-2017-05-26_13-00-04.wav

4. This system is set up so you can tag on your own time independently, and not have to worry about others taking any files you may have already completed. When you are ready to tag, click on the Microphone Number folder, and you will be given a list of dated folders as displayed above, example: M1-05-26-2017, M1-05-27-2017, M1-05-28-2017...etc.

Simply choose the folder you would like and right click, choosing “**Move to...**” from the drop down menu, and move this to the folder with your first name. By moving this folder it is now not available for anyone else to take, and you will be responsible for the tagging of the specific recordings in that folder. This process is displayed below.



After this is completed, you will see the Folder under your name like so...

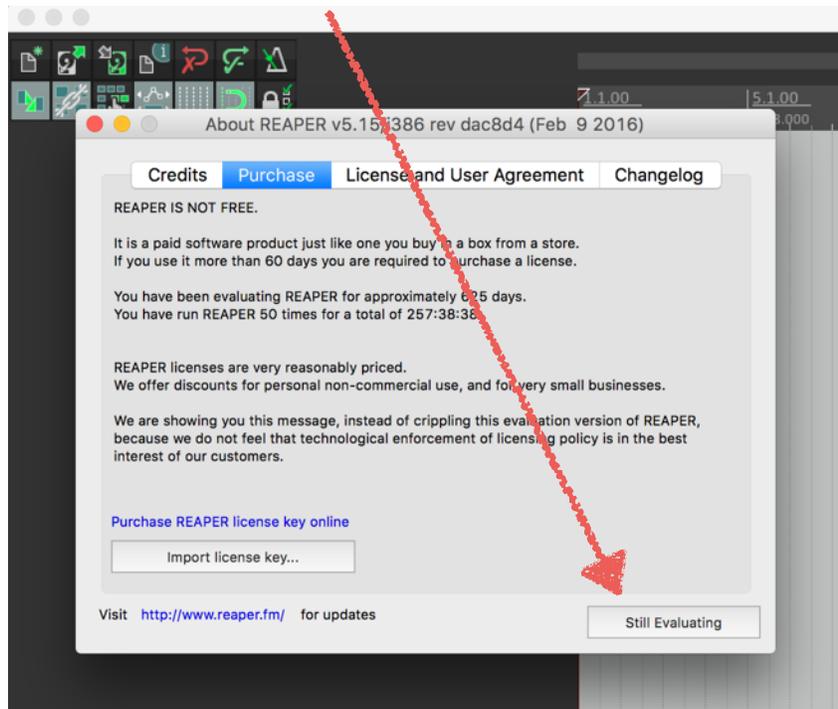


5. Right click on this folder containing the audio which you just moved to your named folder, and click **Download**. This folder will contain all the labeled audio you need to tag.

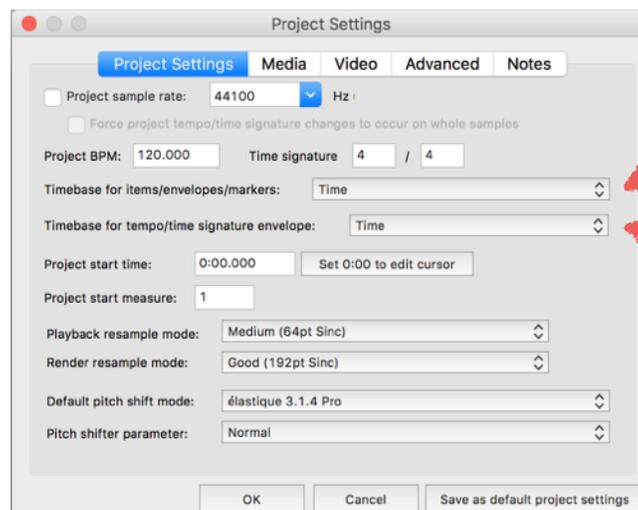
B. Reaper Installation, Setup, and Listening

1. Download & Install *Reaper 32Bit* (<https://www.reaper.fm/download.php>)

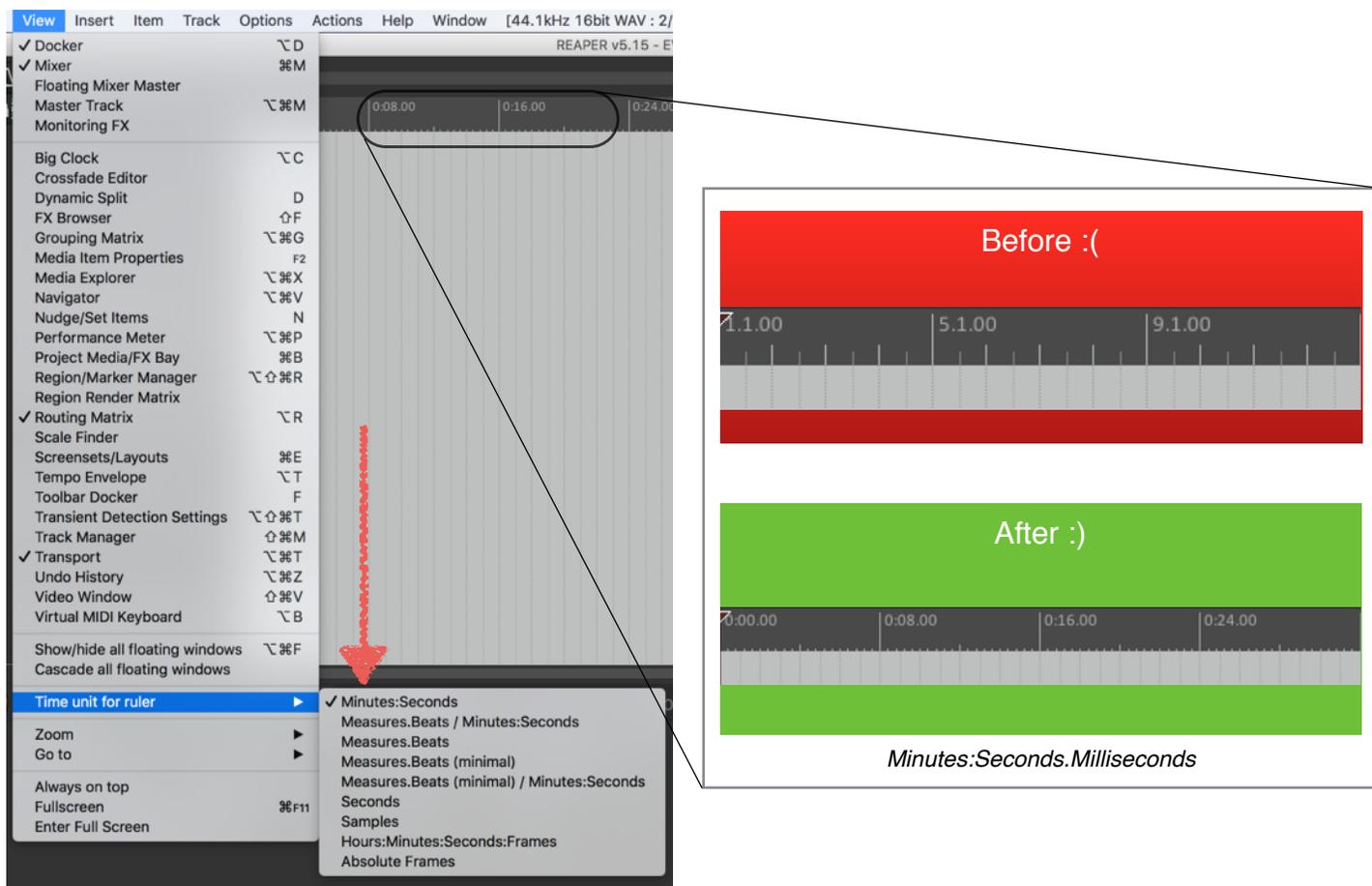
Reaper is a paid program, however it will let you use it as a trial or “evaluation” for as long as you may need. Upon opening the program you will be prompted with the window below. Simply wait for the “Buy Me[5]” counter to decrease until 0, and you will be prompted with “Still Evaluating.”



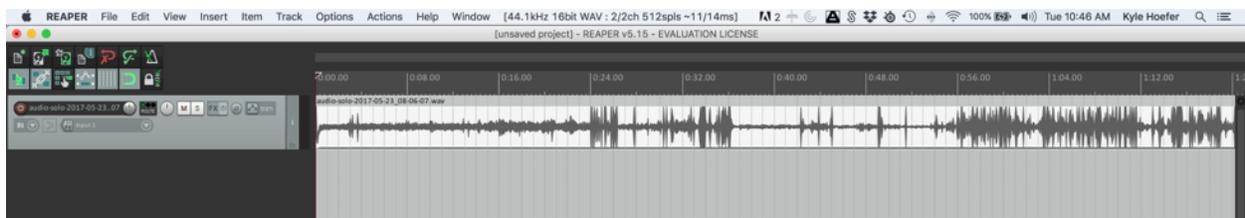
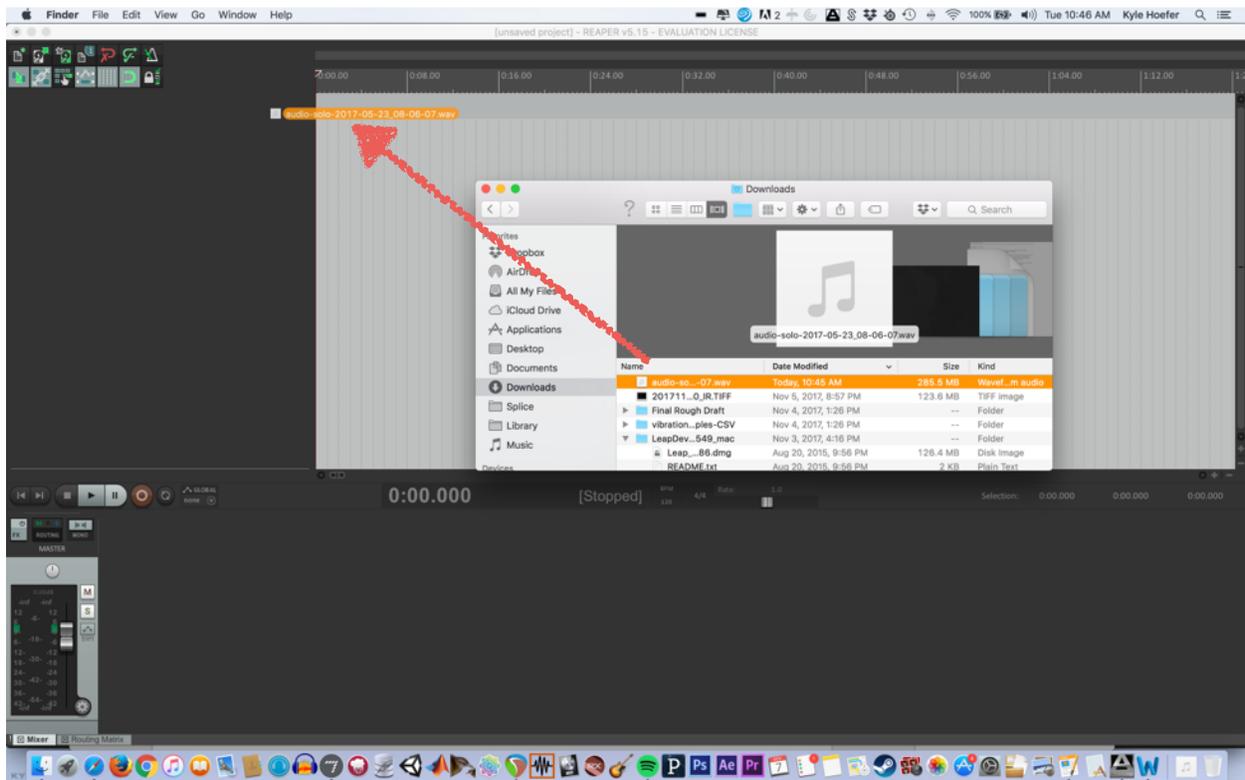
2. After closing the above window, Reaper will ask you to set your Project settings, the only two parameters which may need to be changed are your Timebase’s, these should set **Time** instead of Beats. Click “Save as default...” to save this for later. Then click OK.



3. Before dragging in your audio and listening, we need to change a few more **settings**. As displayed in the images below, your timeline will still use Beats instead of **Time**. It is imperative that we use Time when tagging so we know the exact point when a sonic event is happening. To change this, please go to the top menu and choose *View → Time Unit for Ruler → Minutes:Seconds*.



4. Now you need to bring your audio in to the Reaper session, to do so find the audio file in your folder and **drag** it to the 0:00.00 mark on your timeline, the process done correctly should look like the example below.

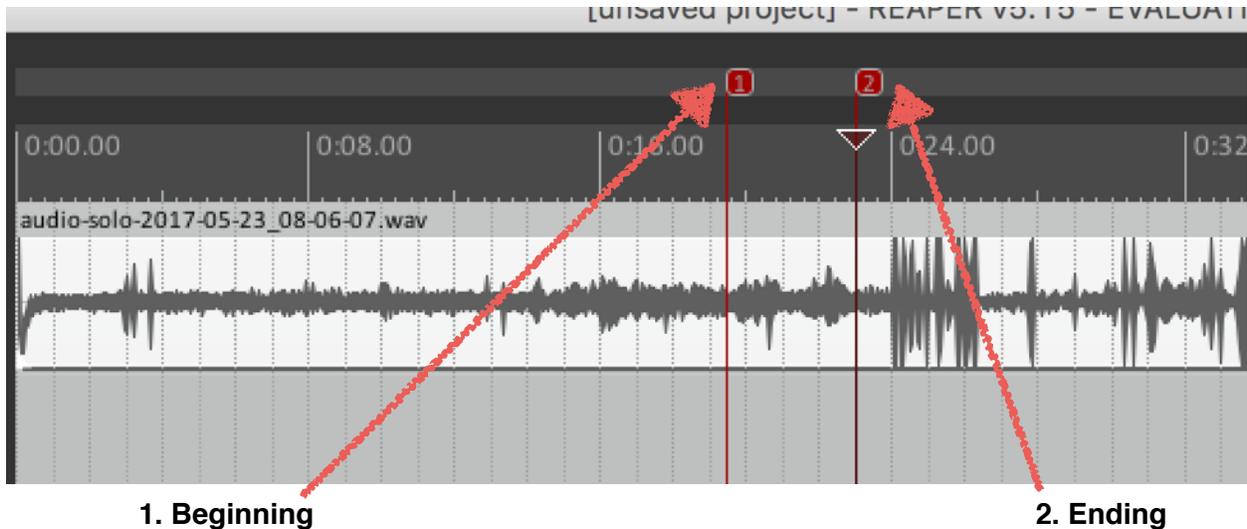


Once processed and imported, you will see the waveforms of the audio file.

5. Set your purple marker to the beginning of the file by dragging it to the 0:00.00 point, press the play button to begin playback. Now to begin listening.

6. When looking for sonic events to tag, it is important to remember that we are not just looking for sounds from nature, **every** sound from that space makes up its acoustic ecology. From your footsteps to talking, to walking away, these are all important parts of the recording as well. **However**, this does not mean that you must tag every little small detail, for example, rustling brush which happens when the wind is moving does not need to be tagged ever 10-20 seconds for the entirety of the recording. Make your best judgement when picking events to tag.

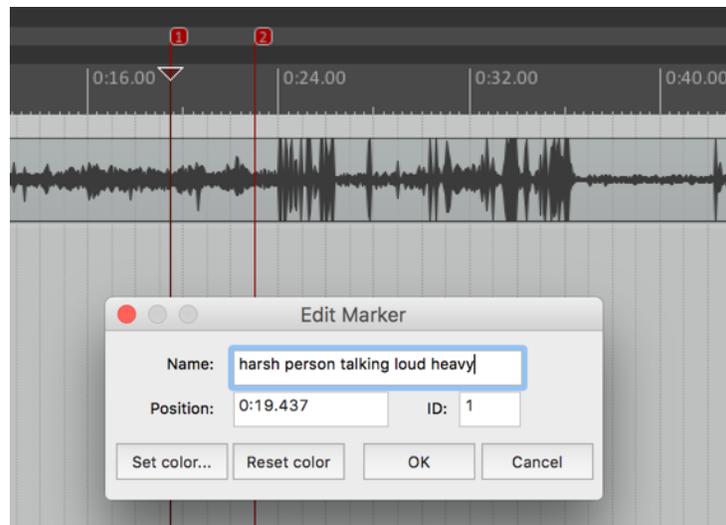
7. When you find an event that you want to tag, you are to mark the beginning and the ending. To mark these points easily without stopping your recording, use the keyboard shortcut “M” for **Marker**, once when it begins and once when it ends. When you successfully tag your first sonic event you will have 2 Markers. This will look like...



8. Now that we have these points in time recorded, we must give descriptors to identify what these sounds are. When picking your descriptors think about the property and the quality of the sound, words like **sharp, harsh, dull**, along with what you believe the sound is coming from, is the perfect description keywords. *If you wanted to find this sound on our database, what would you search to find it?* Below is the comprehensive list of every keyword we have ever used in the database, this is not for you to copy exactly, however it will give you a good start, and allow you to find your own descriptors along the way. This list is also available in a downloadable JPEG format on the TeamDrive.

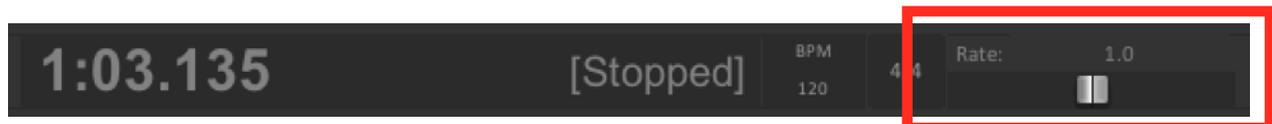
| | | | | |
|------------|------------|------------|-------------|-------------|
| bird | brushing | scene | unlock | bang |
| wildlife | engine | response | bass | unzipping |
| human | door | ground | remote | duck |
| wind | large | blowing | footstep | twig |
| pop | rustling | of | light | pass |
| movement | quiet | crackling | cheeping | drop |
| call | thud | moving | vehicles | staggered |
| calls | chirps | steps | clicking | wood |
| crunching | crickets | inorganic | unique | creaking |
| gravel | rocks | foot | soft | tire |
| distant | subtle | rock | cough | peak |
| breeze | truck | hum | from | coughing |
| chirping | slam | soundscape | solid | songbirds |
| microphone | passing | gentle | zipper | sweatshirt |
| voice | close | adjustment | chain | rubbing |
| nature | mic | group | falling | shutter |
| vehicle | squawk | noise | stand | camera |
| footsteps | fluttering | lock | hollow | jacket |
| birds | droplet | subwoofer | freeway | distinct |
| airplane | cheeps | sound | resonant | squeaky |
| male | electronic | pitched | continuous | crunch |
| strong | over | squawker | scape | dense |
| dried | heavy | songbird | goose | single |
| leaves | church | walking | rummaging | consistent |
| shrubby | splash | zipping | glass | short |
| buzzing | winds | rain | honking | flying |
| fly | insect | wading | bug | beetle |
| brief | song | frog | road | starting |
| sounds | cheep | knocking | shuffle | emptying |
| chirp | texture | fabric | raspy | ringing |
| clip | eagle | zippers | adjustments | dialog |
| small | bells | churches | muffled | tossed |
| motor | life | drip | mellow | bits |
| gust | whistle | background | multiple | chatter |
| shuffling | movements | birdcall | prey | crash |
| car | long | mild | breaking | big |
| metal | wild | up | dropping | together |
| female | caw | swishing | ting | rich |
| insects | twigs | breathing | sheet | sonic |
| wings | honk | stones | running | turbines |
| water | dry | eating | creek | pattering |
| squawking | high | branch | quick | voices |
| clipping | talking | reverb | calling | silence |
| clanking | clicks | whispering | sneeze | textural |
| cricket | squeak | beeping | screech | environment |
| animal | dove | scratch | flowing | aluminum |
| bump | canteen | semi | zzyzx | falls |
| loud | crack | deep | stuttered | clinking |
| sharp | low | cracking | windscape | croak |
| faint | sprinkler | object | generator | overhead |
| crow | gusts | through | branches | steady |
| flapping | setting | breezes | shut | squeaks |
| bumped | click | chipping | cricket | little |
| ambience | plants | tone | ambient | valley |
| gate | beep | unlock | boom | spines |
| sand | buzz | | rumbling | Death |
| buzz | and | | bang | |
| squeaking | cacti | | | |

9. When you have your descriptor keywords picked out, you need to double click on the first marker you placed at the beginning of the sonic event. In the example above this marker is labeled at “**1. Beginning**” Doing so will bring up the window displayed below, and this is where you will place your keywords. When adding, please **DO NOT** use commas to separate the words, only spaces. Although this may look odd or incorrect, it makes it immensely easier for us to add these tags to our database in the future. *There is no need to use descriptors in the 2nd or “Ending” marker because this number will only signify when that sonic event ends.*



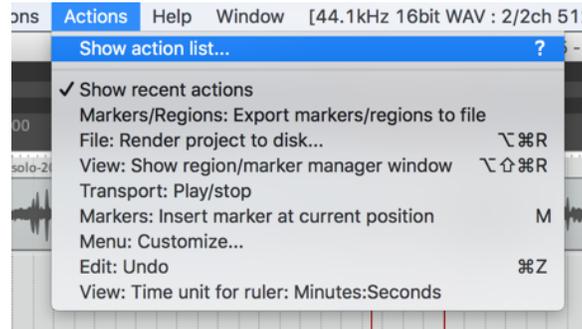
You will continue this tagging process for the entirety of the recording.

10. **TIP:** You may speed up this process by increasing the playback speed of the recording, next to the timer in Reaper you will see the “Rate” slider. Normally it will be set to 1.0, however you can move it anywhere from -4.0 to 4.0 times speed. This may seem tempting, however **please don't** listen at more than 2x speed, as you will lose crucial small details in the sound that could be important.

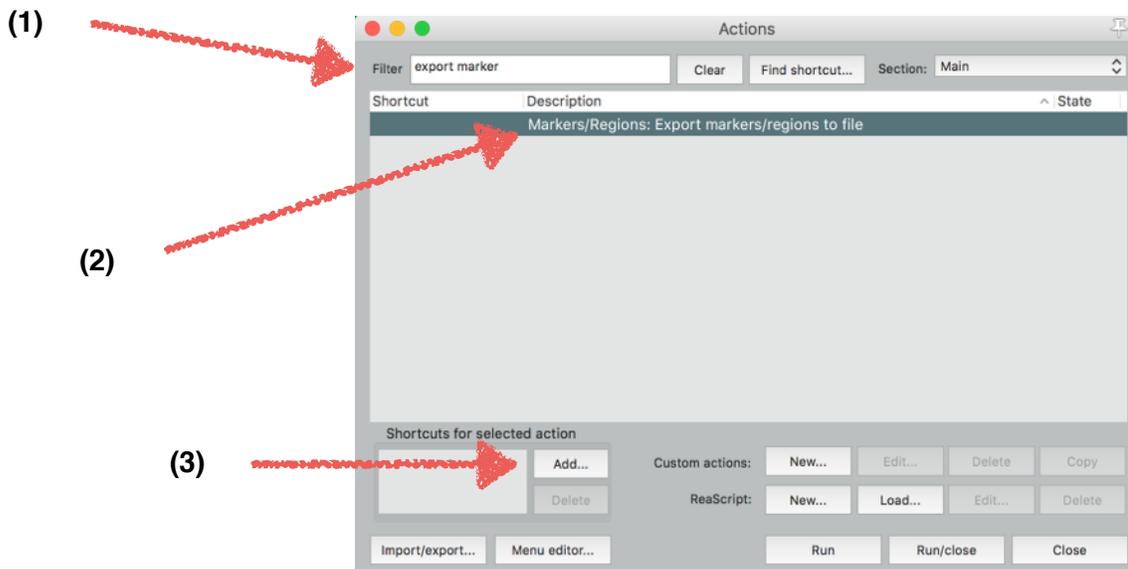


11. Once your tagging for this audio file is complete you will have an equal number of Beginning Markers and Ending Markers. In order to get these in a simple format we can translate to the Google Spreadsheet, we will export this data from Reaper.

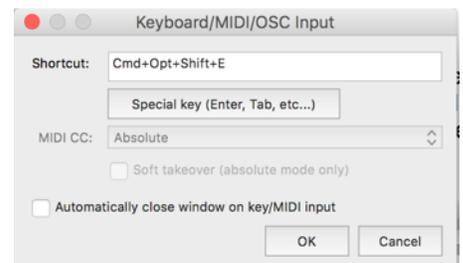
You must first set your hotkey for exporting this file by going to your menu and clicking *Actions* → *Show Action List...*



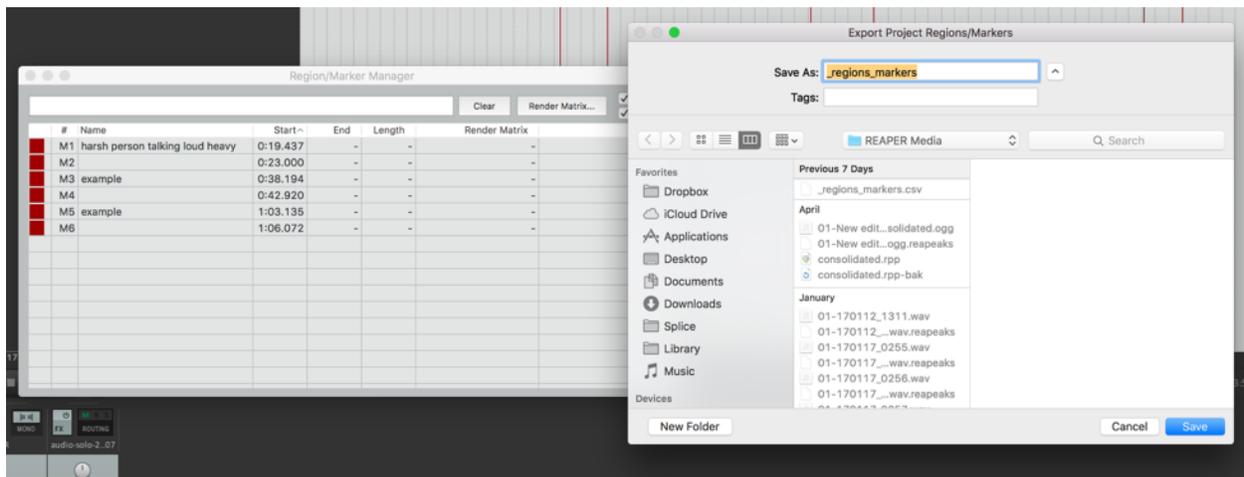
The Action List window will appear. (1) In the search bar labeled “*Filter*” type the keywords “**export marker.**” This will bring up the action as displayed below. (2) Click the action description, then (3) click the “**ADD**” button in the bottom left under “Shortcuts for selected action.”



This will bring up the window displayed here. *Before* clicking anything in this window, simply hold down your **Command, Option (or Alt), Shift, and E** keys simultaneously. The window will display these keys, and you have now created your hotkey export command. Click OK.



12. After clicking OK, you will be returned to your Reaper session. Click your hotkey's Command+Option(Alt)+Shift+E at the same time and you will be given the two windows displayed below.



In the window on the left, you will see your marker list, here M1 marks the beginning of the first sonic event, and M2 marks the ending of it. You will also see your descriptors under the Name section. Please make sure this is correct before exporting, and that each beginning marker has its subsequent end. (Even though they are both in the START column, M2 marks the end of the first sonic event.)

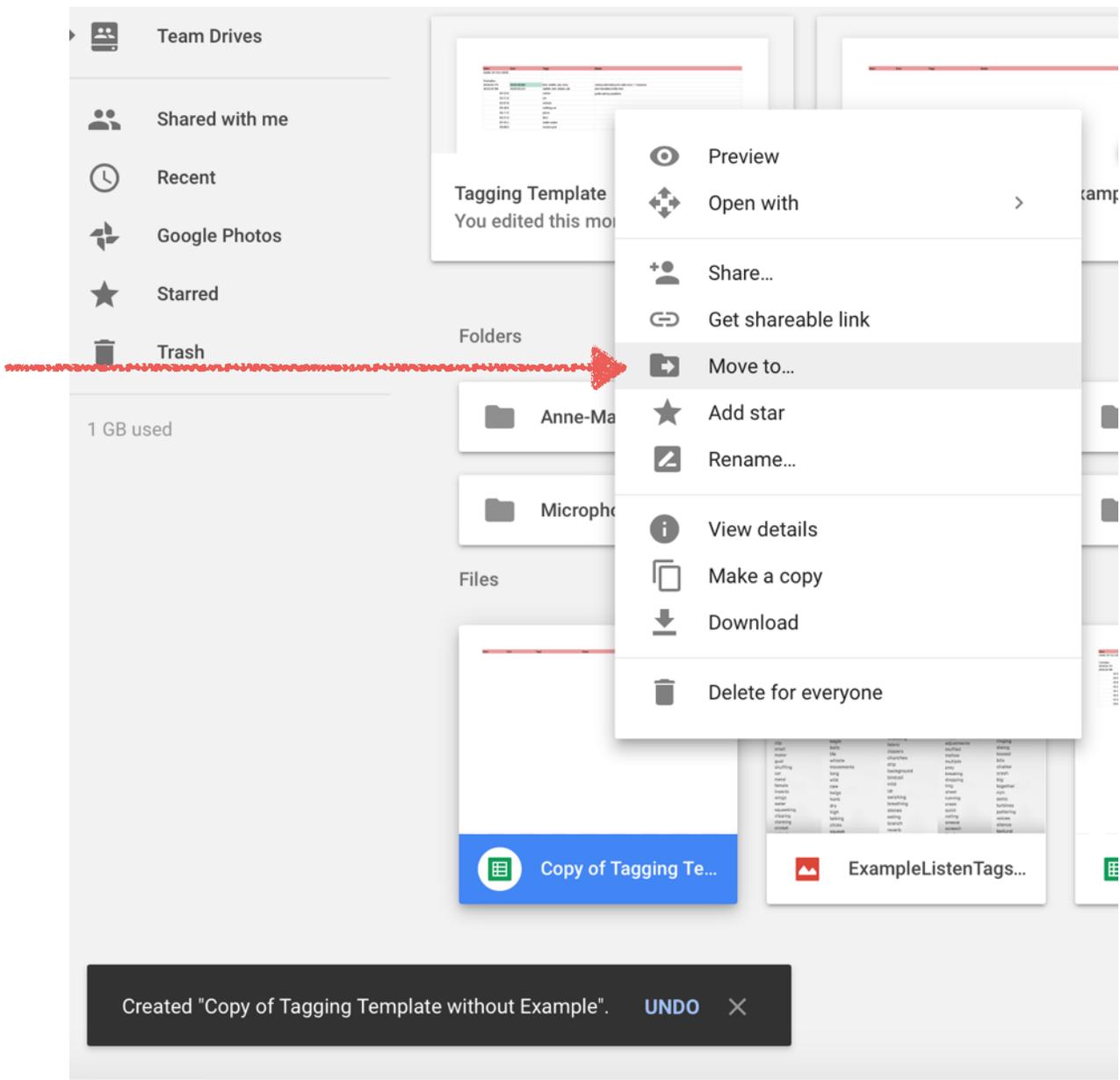
SAVE to a location you will remember, along with the name you desire. Before beginning to tag another recording file, you will need to upload this data to a Google Drive spreadsheet (which we will go over in the next section), so it is OK to overwrite your previous file as long as this step has already been done. Once saved, you will have a **.csv** file which can be opened with a program such as Microsoft Excel, this makes it extremely easy to copy/paste/import your tags and timestamps in to the Google Spreadsheet.

| | A | B | C | D | E | F |
|---|----|---------------------------------|---------|-----|--------|---|
| 1 | # | Name | Start | End | Length | |
| 2 | M1 | harsh person talking loud heavy | 00:19.4 | | | |
| 3 | M2 | | 00:23.0 | | | |
| 4 | M3 | example | 00:38.2 | | | |
| 5 | M4 | | 00:42.9 | | | |
| 6 | M5 | example | 01:03.1 | | | |
| 7 | M6 | | 01:06.1 | | | |
| 8 | | | | | | |

C. Documenting Tags in TeamDrive

1. Once you have your **.csv** file opened and your tags accessible for copying and pasting, you will want to head to the home page of the Team Drive. Here, right click on the file called *“Tagging Template without Example”* then click *“Make a Copy”* from the drop down menu. This will create a copy of the template on the home page of the Team Drive.

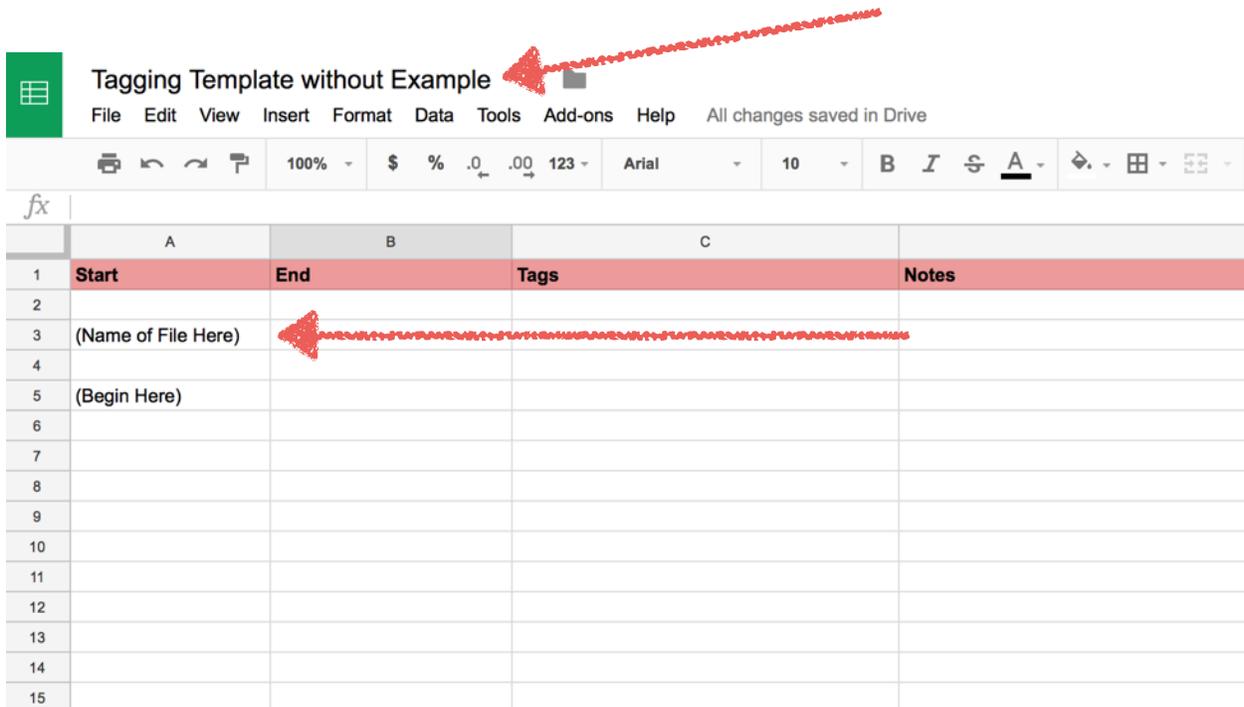
Next, right click on the *“Copy of Tagging Template without Examples”* you just made and choose *“Move To..”* from the drop down menu. Move this file to your folder.



2. Head to your folder and open up this spreadsheet. Below are two pictures, the first is what it will look like originally and the second is how you will want it to look when you're done. **It is important to remember that you will have ONE spreadsheet for every FOLDER. Within that spreadsheet you will include all audio files from that folder, as such...**

- Change the title of the spreadsheet to the name of the folder: ex. M1-23-11-2017
- Replace the (Name of File Here) with the name of the audio file. You can copy this directly from your Finder.
- Use the **NOTES** section if there is anything you think needs to be addressed that is important/irregular, this is totally up to you to decide.

BEFORE:



AFTER:

| | A | B | C | |
|----|--------------------------------|--------------|---------------------------------|--|
| 1 | Start | End | Tags | Notes |
| 2 | | | | |
| 3 | audio-solo-2017-05-23_08-06-07 | | | |
| 4 | | | | |
| 5 | 00:00:19.000 | 00:00:23.000 | harsh person talking loud heavy | |
| 6 | 00:00:38.200 | 00:00:42.900 | example | |
| 7 | 00:01:03.100 | 00:01:06.100 | example | strange pop |
| 8 | | | | |
| 9 | audio-solo-2017-05-25_08-06-07 | | | |
| 10 | 00:00:19.000 | 00:00:23.000 | heavy breathing music | |
| 11 | 00:00:38.200 | 00:00:42.900 | bird sharp whistle | bird calls increasing in intensity over time |
| 12 | 00:01:03.100 | 00:01:06.100 | example | |
| 13 | | | | |

Here I have used 2 files as an example, however in your version you will have as many files as there are in your folder.

Once this is complete you can just leave it in your folder, we will access the spreadsheet to transfer the tags to our database!

Thank you and happy tagging!