

Raven Selection Review

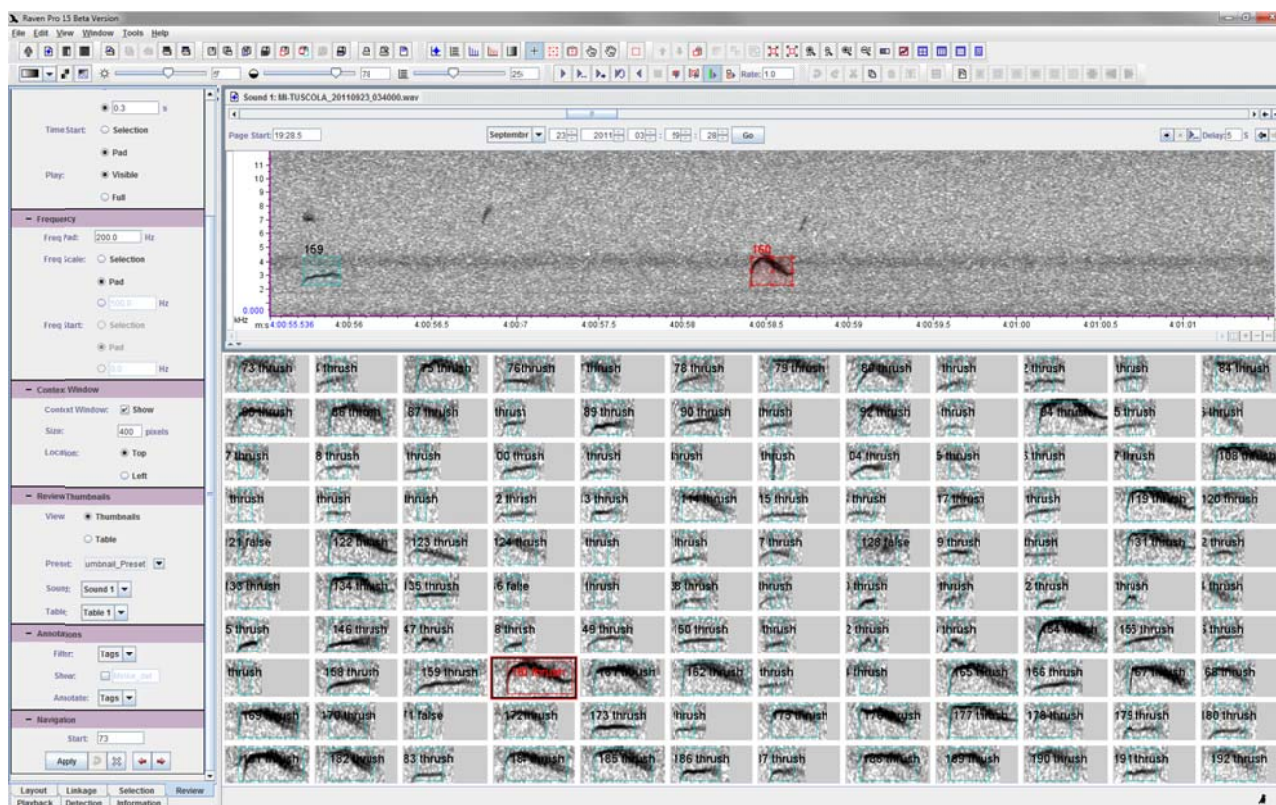
Introduction

The Raven Selection Review feature is a powerful tool that allows the user to review tens or hundreds of events at once and annotate those events. This tool is particularly useful if you need to verify and annotate a large number of selections. You will not find instructions for the “Selection Review” feature in the Raven Manual because it is a relatively new feature in the Beta version and still has some bugs to be worked out.

In this example, we have run the Band Limited Energy Detector on 1 hour of sound to detect thrush signals. Now we have 450 un-reviewed selections to verify if they are thrush signals or not. If a selection is a true thrush signal, you want to tag it as “Thrush”. If the detection is not a true thrush signal, you want to mark the selection as “False”.

Key Features:

- Review as many selections at a time as you feel comfortable with (120 selection, for example)
- Tag selections one at a time and the active selection advances to next selection
- Annotations appear in selection table. Useful when table is exported.
- Select all selections at once
- Tag all selected selections at once
- Select multiple specific selections to tag
- Assign keystrokes to tag annotations
- Review spectrographic contextual information around the selection
- Advance forward to review next batch of selections
- 450 events reviewed in just 4 quick steps

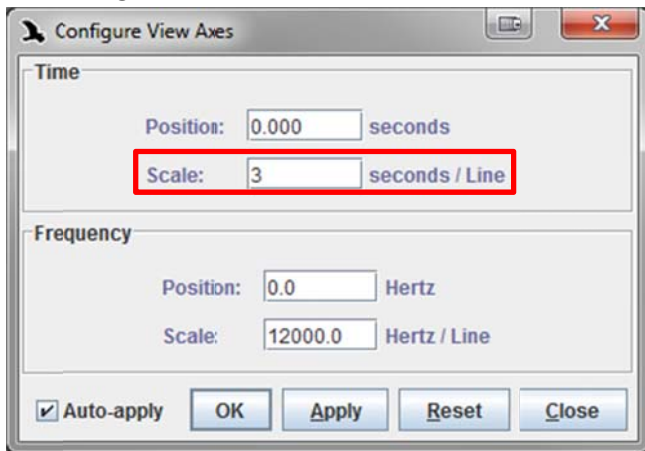


Warnings:

- The spectrogram and review settings used in this example will most likely not work for your specific data set and will need to be modified to suit your signal(s) of interest (e.g., different frequencies and time durations)
- The settings that you will use also depend on your computer (memory, screen size, monitor resolution), so you will likely need to change the Review panel settings to suit your machine.
- The Selection Review feature is new to Raven 1.5 and still has a lot of kinks in it that the developers are working on.
 - If you find that the views appear to be buggy:
 - Try to toggle between the Review panel and others to see if it will reset
 - Try clicking on the white “X” at the bottom of the Review panel to close the selection thumbnails.
This can take a while, depending on how much sound information is within each thumbnail.

Procedure (for Red-Eyed Vireo example)

1. Open sound file
 - a. Drag and drop the “NFC-MI-TUSCOLA_20110923_034000.wav” file into Raven
 - b. Window Preset: Default
 - c. Paging: Page Sound
 - i. Page Size: 3 minutes
 - ii. Page increment: 90 percent (default)
 - iii. Step increment: 10 percent (default)
 - d. click OK
2. Deselect waveform view
3. Change time axis to 3 s



4. Open the Thrush selection table
5. Sort the table by Begin Time (single-click on the column header)
6. Add a columns:
 - a. Right click on any column heading
 - b. Click “Add annotation column”
 - c. Name an annotation column called “Tag” (for example)
 - d. Add “measurements columns”
 - Delta Time
 - Delta Freq.
7. Go to the “Review” panel at the bottom of the left side panel



- a. Fill out the panel parameters to match the figure on the right
- b. Hit “Apply” when all the parameters are updated

Selection Review

Layout

Rows: 3

Columns: 5

Time

Time Pad: 0.05 s

Time Scale: Selection

Pad 0.3 s

Time Start: Selection

Pad

Play: Visible

Full

Frequency

Freq Pad: 200 Hz

Freq Scale: Selection

Pad 300.0 Hz

50.0 Hz

Freq Start: Selection

Pad

Context Window

Context Window: Show

Size: 400 pixels

Location: Top

Left

Review Thumbnails

View: Thumbnails

Table

Preset: Zoom

Sound: Sound 2

Table: Table 1

Annotations

Filter: Tag

Show: Minke_det

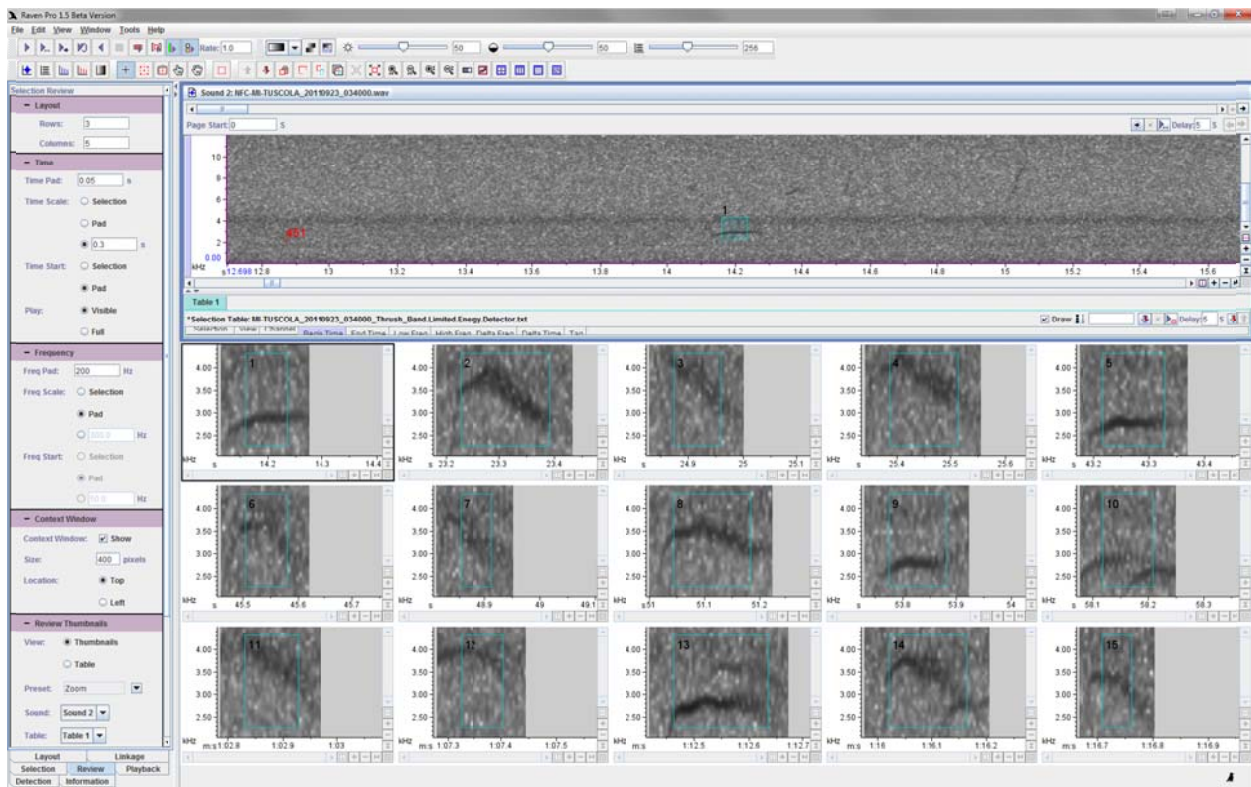
Annotate: Tag

Navigation

Start: 1

Apply

8. Your screen should look like this:



“Context View”

“Thumbnail View”

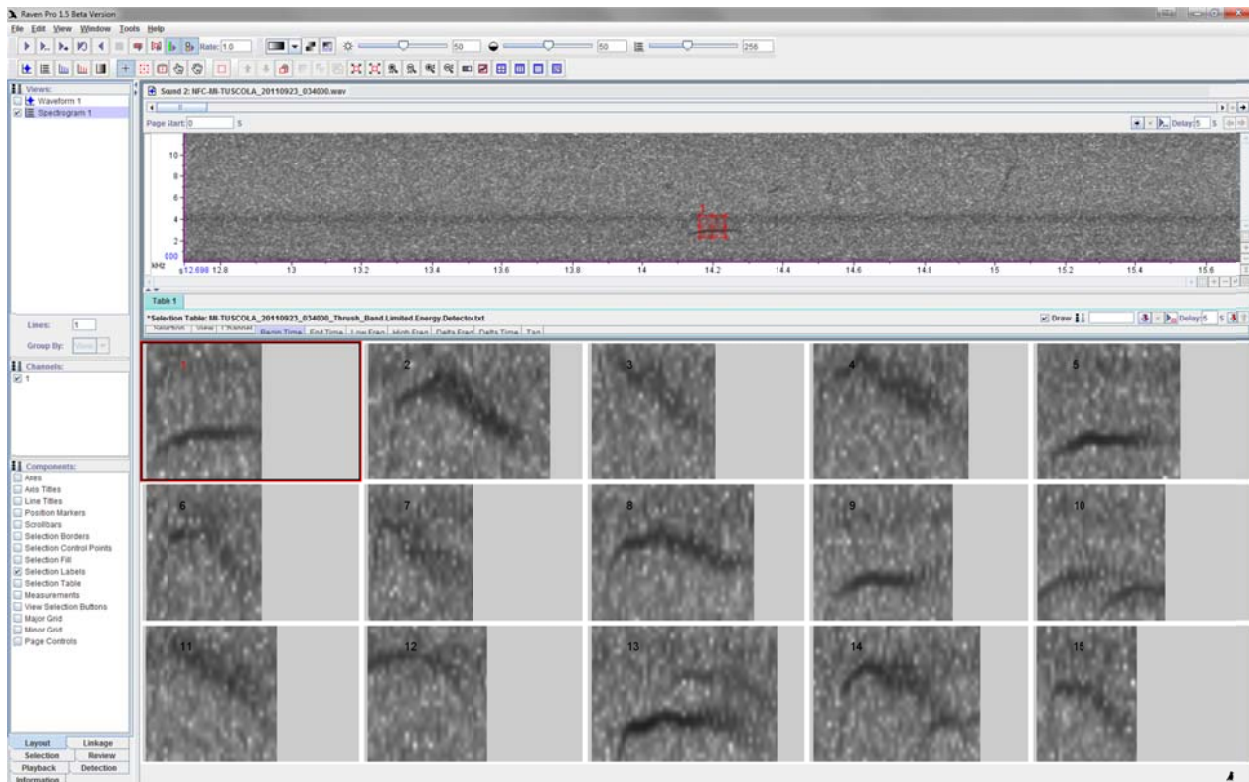
If the context view does not adjust sizes after you changed it, toggle between tabs in the panel and go back to the “review” tab. I don’t know why, but this usually triggers it to update.

Maximizing Spectrogram Space

1. If you’d like to review thumbnails without the axes and scrollbars:

- Click on any thumbnail
- Navigate back to the “Layout” tab in the left panel
- Under “Components”, uncheck
 - Axes
 - Scrollbars
 - Selection Table (if it’s been selected already)
 - Page controls

2. Your screen should look like this:



Note: If changes are not reflected on the thumbnails, but you see them on the Context view, you have selected the wrong spectrogram view.

3. Do **NOT** navigate to other thumbnails yet. If you do, the settings will reset and the thumbnails will display everything you unchecked. (show example)
4. To display the Tag annotation in your thumbnail
 - a. Right click on the same activated thumbnail
 - b. Click "Configure Selection Labels"
 - c. Under "Available Items" select "Tags" and click the left arrow button to the left. This should add the "Tags" field to the "Displayed Items" list, below "Selection ID Number" annotation.
 - d. Click "OK"
5. Save a new preset
 - a. Right click on a thumbnail
 - b. Go to "Window Preset"
 - c. "Save as"
 - d. For this project, we can name our preset **"SAW_Thrush_Thumbnail_Preset"**
6. Apply your new preset to the thumbnail view
 - a. Go back to the "Review" tab
 - b. Under "Review Thumbnails", change the preset from "Zoom" to your newly saved preset
 - c. Click "Apply"
7. Collapse your selection table to optimize the Context View spectrogram

9. Adjust your contrast (75 for example), brightness (58), and FFT (256) settings as you see fit
8. Thumbnails will appear in the same order as your selections, so if they are sorted by begin time, then the thumbnails will be displayed in chronological order
9. You can collapse the “Review” pane to maximize the space for the thumbnails, but it might be buggy and cause your thumbnails to display improperly.

Navigating Your Selections

1. Select different thumbnails
 - a. Click on individual thumbnails
 - b. Use the arrow keys to navigate through thumbnails
2. To advance to the next set of 15 thumbnails
 - a. Select the last thumbnail at the bottom right and hit the right arrow key
 - b. Or, hit “Ctrl” + “→” (or “command” + “→” on a mac)
3. Click on any thumbnail of interest and that selection will be centered in the Context Window.
4. You can navigate through your “Context window” by scrolling forward and back and clicking on a selection of interest
5. In “Active Selection Mode” , you can click on a selection event in the Context Window and the thumbnail will be selected
6. Playback audio clip within thumbnail

Annotating Selections

1. Bring your selection table into view (if it was minimized)
2. Tag annotations
 - a. Type “y” to indicate that a signal is a thrush (yes)
 - b. Type “n” to indicate a signal is not a thrush (no)
 - c. Notice the “y” and “n” annotation appear under the “Tags” column in your selection table
 - d. Click any thumbnail and hit any character. It should display to the right of the Selection ID number
3. To annotate multiple thumbnails
 - a. Hold “Command” (mac) or “Ctrl” (PC) to select several specific thumbnails
 - b. Click on thumbnail, hold “Shift” and click another thumbnail to select a continuous bunch
 - c. Press Ctrl+A to select all thumbnails
4. Select the inverse of your active thumbnails
 - a. click Command (ctrl)+i

The Review Panel: A Basic Overview

- Layout: defines the thumbnail matrix
- Time:
 - a. Time Scale:
 - **Selection** – if we apply “selection”, the time length of each thumbnail will equal the duration of the selection in that thumbnail.
 - ➔ Useful if thumbnails are all the same time length and the signal does not go beyond the selection boundaries
 - ➔ If selections vary in time duration, you will have to adjust the FFT for each thumbnail (not optimal)
 - **Pad** – Adds a time pad to the beginning and end of the selection
 - ➔ The thumbnail time duration = duration of selection + (time pad *2)
 - ➔ Useful if each selection is equal in time duration and some of the target signal exceeds the selection boundaries
 - **Seconds** – Defines a fixed time duration for all thumbnails, regardless of selection duration
 - ➔ Useful when selection duration varies
 - ➔ Since all thumbnails are on the same times scale, the FFT only needs to be set once
- Frequency – similar to the “Time” section
- Context Window – self explanatory
- Review Thumbnails –
 - a. View:
 - **Thumbnails** – enable thumbnails to be visible
 - **Table** – Removes thumbnails so the selection table can be visible
 - b. **Preset** – allows you to select the thumbnail preset you would like to use
 - c. **Sound** - allows you to choose which sound file you want to apply thumbnails to
 - d. **Table** – allows you to select the table you want thumbnails applied to
- Annotations
 - a. **Filter** –
 - b. **Show** – Only show selections with a specific annotation
 - c. **Annotate** – Define which annotation has or will have the tags annotation
- Navigate
 - a. **Start**: the selection ID number that you want to begin reviewing thumbnails with

Using Keymaps to Generate Annotation Presets

1. Open Raven Preference file (*this file contains parameters and codes and allows the user freedom to modify those parameters*)
 - a. Edit
 - b. Preferences
 - c. When prompted with the “Preferences Warning window”, click OK
2. Scroll to the bottom of the file and type the following text in a new line

```
#=====
```

```
Keymap and Tagging Preferences
```

```
#=====
```

```
raven.ui.selectionReview.enabled=true  
raven.annotation.keyMap.useUnmappedKeys=true  
raven.selectionTable.autoSave.threshold=400  
raven.ui.selectionReview.enabled=true  
raven.ui.selectionReview.tabAfterClassify=false  
raven.annotation.keyMap.1=t,Tag:Thrush  
raven.annotation.keyMap.2=f,Tag:False
```

```
#-----
```

3. Save Preference file and restart Raven
4. Set up selection review again. Raven should remember your settings for the Review Panel
5. Select any thumbnail
 - a. Hit “t” – you should see “Thrush” display in the thumbnail next to the selection ID number
 - b. Hit “f” – “False” should appear next to the Selection ID number
6. Go to the Context Window
 - a. Activate the Selection Table if it is still deactivate
 - b. Expand the Selection Table to reveal the selection attributes
 - c. Under the “Tags” column you should see “Thrush” and “False” appear in the selection event line that you tagged