

Appendix 2. Categories to filter MSRP detections using a visual scan of the ASL array spectrogram display.

To ensure the most accurate locations were used for further statistical analysis, detections were categorized based on the quality of recording and our best estimate of its position relative to the ASL array. Tables A2.1 through A2.3 provide a visual description of these categories. Figure A2.1 below shows the layout of the site used in these examples. This is provided because the alignment of stations in the output of the array visualization script is transposed. The station channels are also shown left to right which may not be consistent with the site layout.

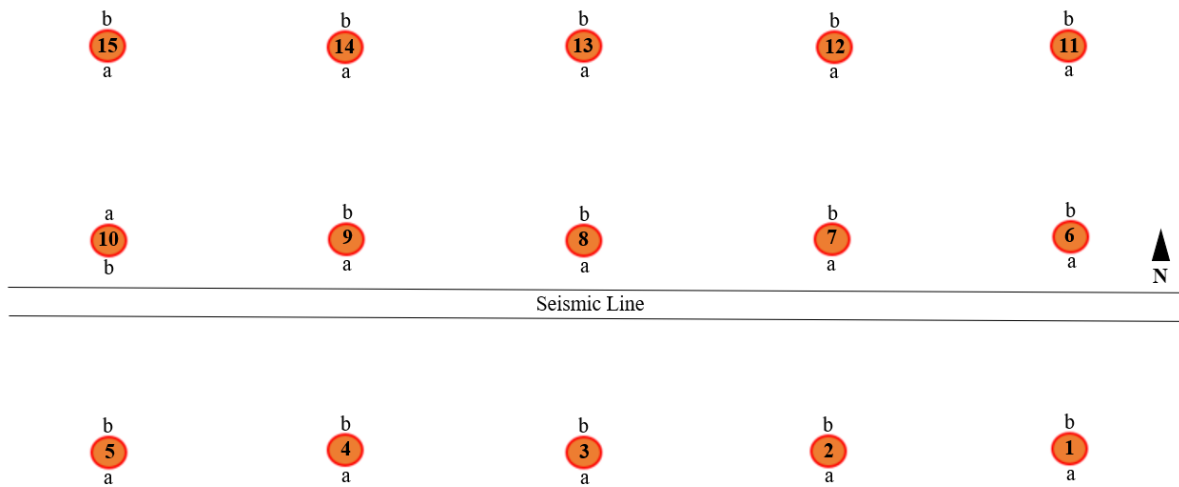
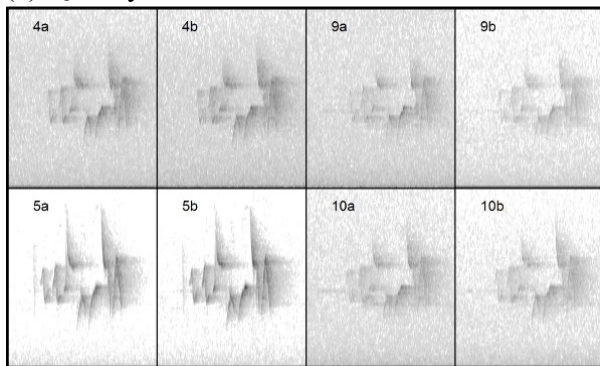


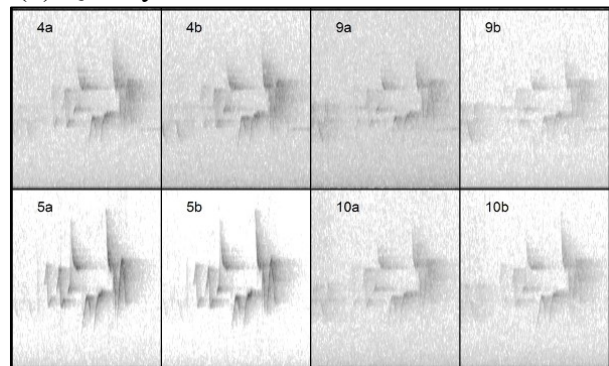
Figure A2.1. The array format of the recordings used in the examples provided for filtering MSRP detections based on the array visualization script. “a” represents channel 1 or the left microphone if you are facing the unit; “b” represents channel 2 or the right microphone. ARUs were not able to consistently face in the same direction based on impeding vegetation or unevenness of the tree trunk itself.

Table A2.1. Spectrogram quality: this describes the quality of a detection as it appears on the four stations selected for localization. Quality of detection considers interference within the time and frequency domain of the clip which would otherwise influence the accuracy of the MSRP localization method. Each example below includes a clip of the same four stations (4,5,9 and 10) from the array visualization script output which was used to determine the categories. The categories are labeled as 0 (no interference, ideal for localization), 1 (no or minimal interference within the frequency range, low intensity interference within time range), 2 (interference within the time and frequency range, either being abundant low to moderate intensity interference or a single high intensity source of interference), and 3 (interference within the time and frequency domain such that it masks the target song and localization would not be reliable).

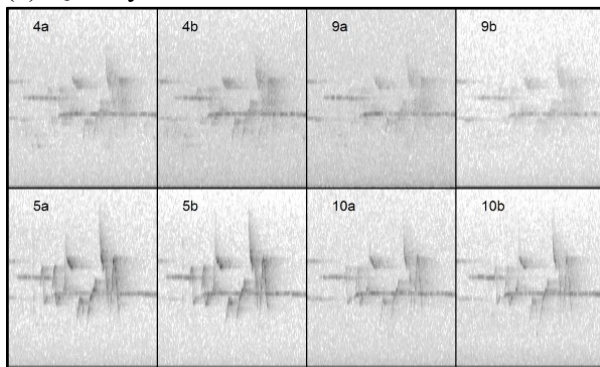
(a) Quality: 0



(b) Quality: 1



(c) Quality: 2



(d) Quality: 3

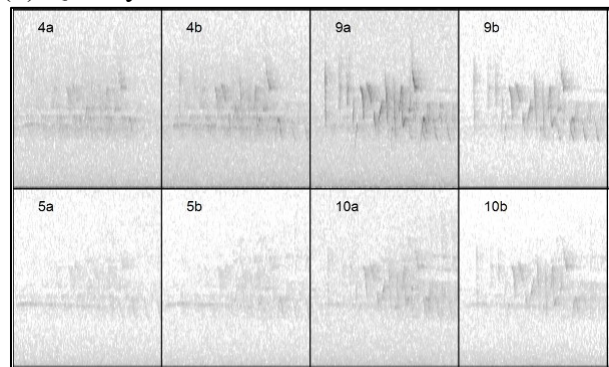
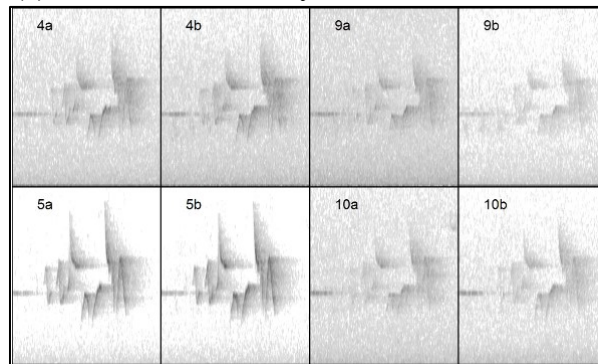


Table A2.2. Contained by the array: this category describes whether a singing event was likely to be within or outside of an ASL array. The approximate location of a singing event could be determined by the relative intensity of the spectrogram amongst ARU stations at a site. The direction it was originating from could then be distinguished by comparing its relative intensity amongst channels at a given station and the orientation of the respective microphones. In (a), the song is close to station 5, however appears most defined among channels 4a and 5a which are oriented towards the outside of the array; in (b), the song is closest to station 9 which is on the interior of the array, as well as most intense among channels 9a and 4b which are oriented towards each other.

(a) Outside of the array



(b) Inside the array

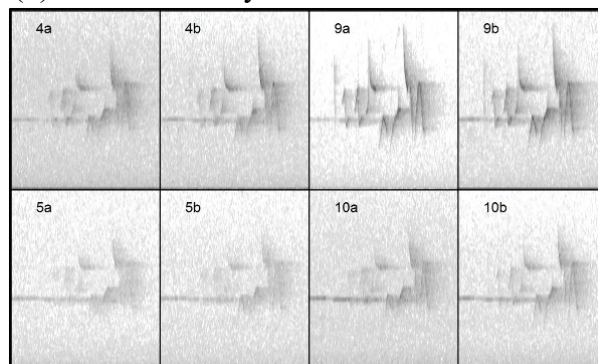
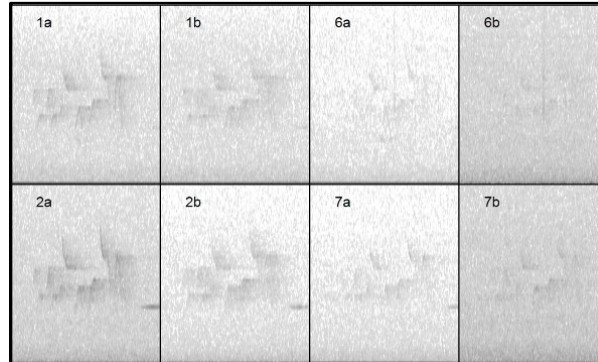


Table A2.3. Proximity to the edge: if singing events were close to the edge of an ASL array, it could be difficult to determine whether it was inside or outside of the array perimeter. This category was included to prevent these locations from being pre-emptively eliminated from the analysis if their approximate location could not be easily distinguished from the visual scan. In (a), the song is closest to station 2 which is located on the edge of the array but has a very low intensity, suggesting that it is far away; in (b), the song appears with a high intensity on station 5, indicating that it is very close to this station, which is on the edge of the array.

(a) Away from the edge



(b) Close to the edge

