The acoustic identification of small terrestrial mammals in Britain

Appendix

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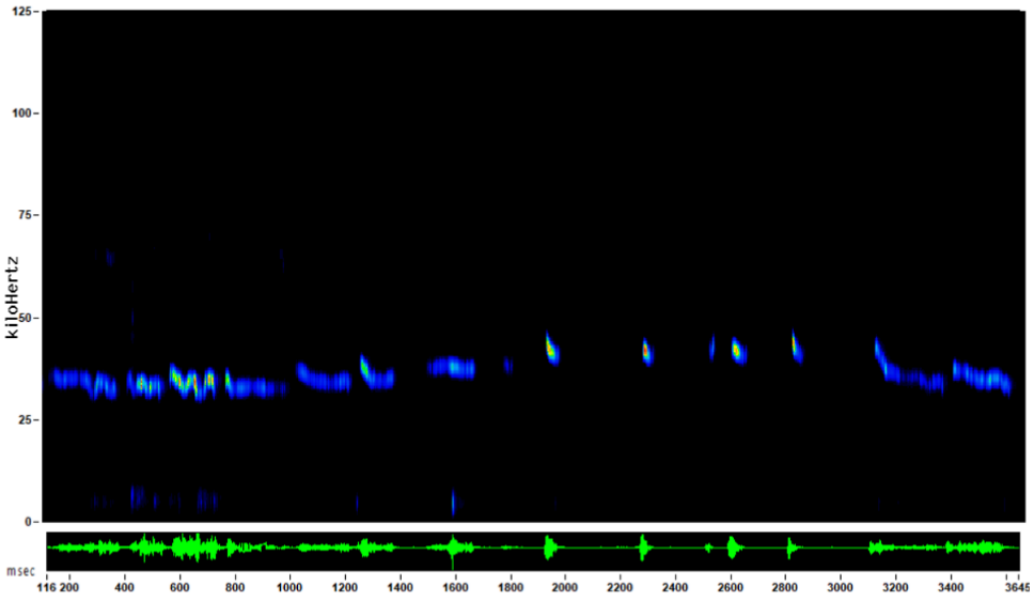
For the full article, see *British Wildlife* Volume 32, Number 3, December 2020.

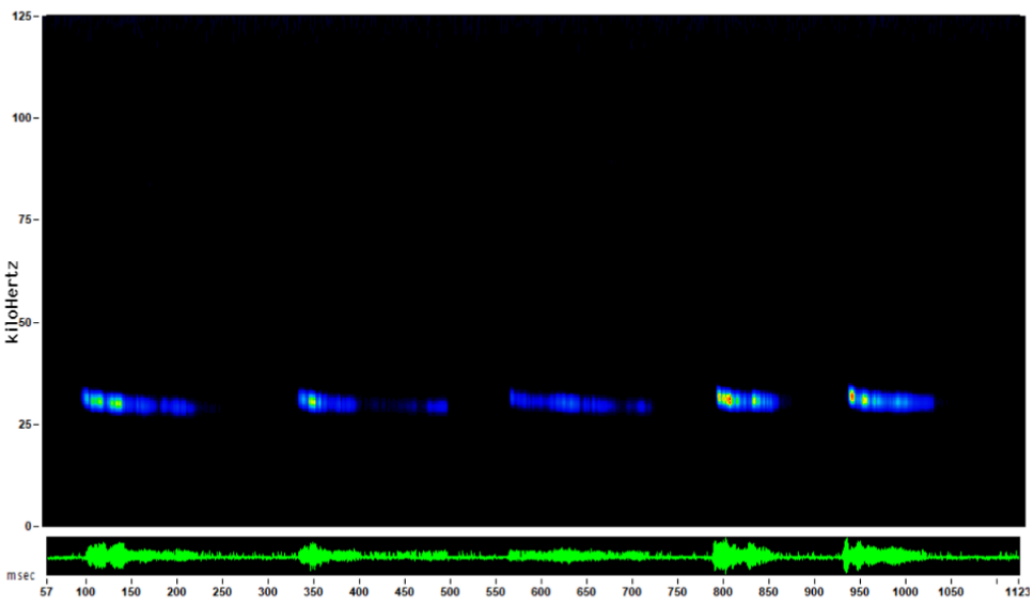
Examples of variation in the calls of small mammals (typical examples and features for the separation of different species are given in the main article text).

The species included are as follows:

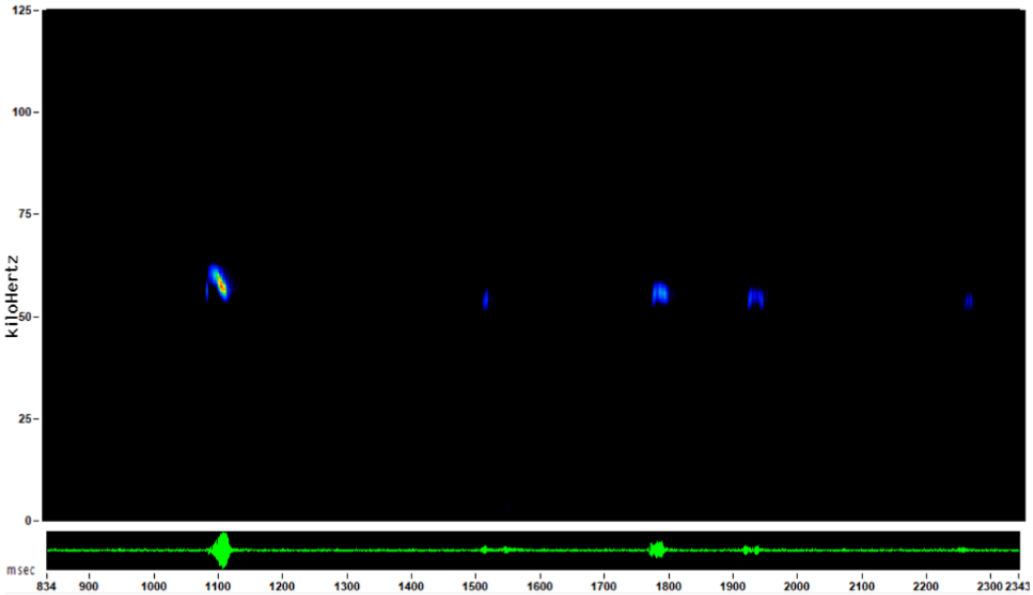
Wood Mouse: typical recording with calls between 30 and 40kHz (frame width 3,529ms).



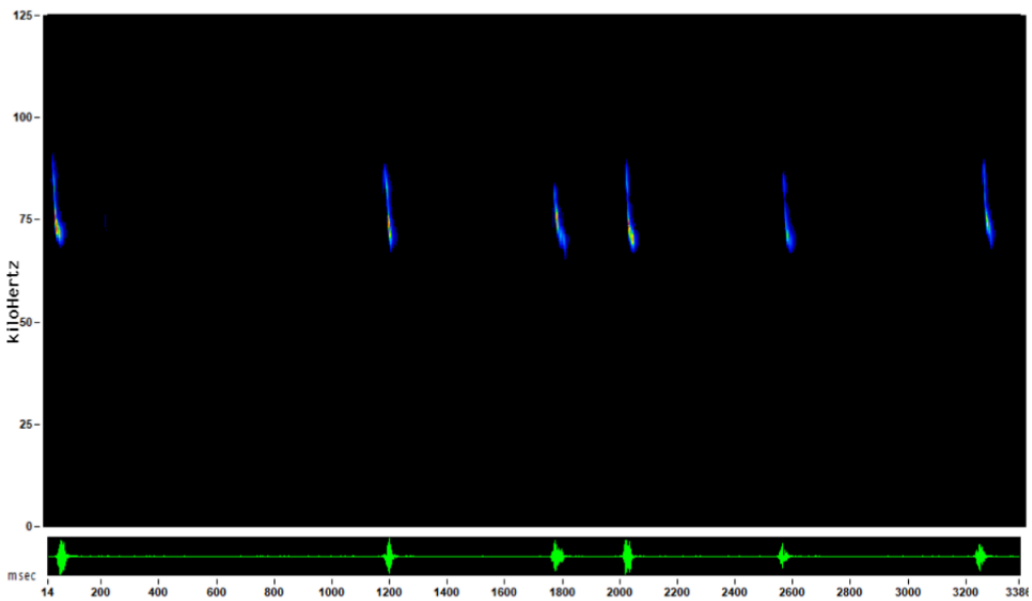
Wood Mouse: some lower frequency calls of Wood Mouse (frame width 1,066ms).



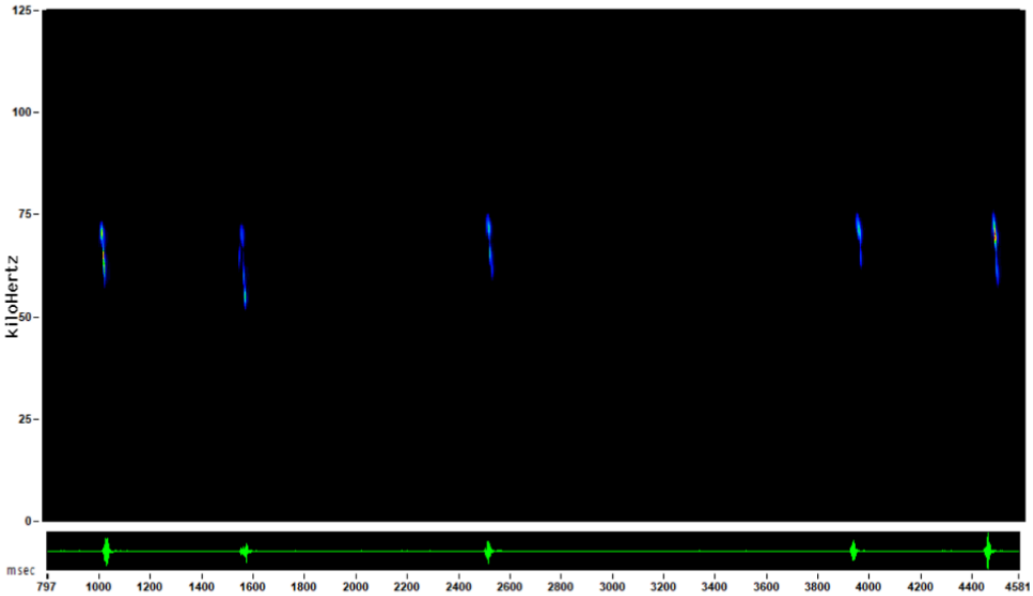
Wood Mouse: inverted u-shape calls (frame width 1,506ms).



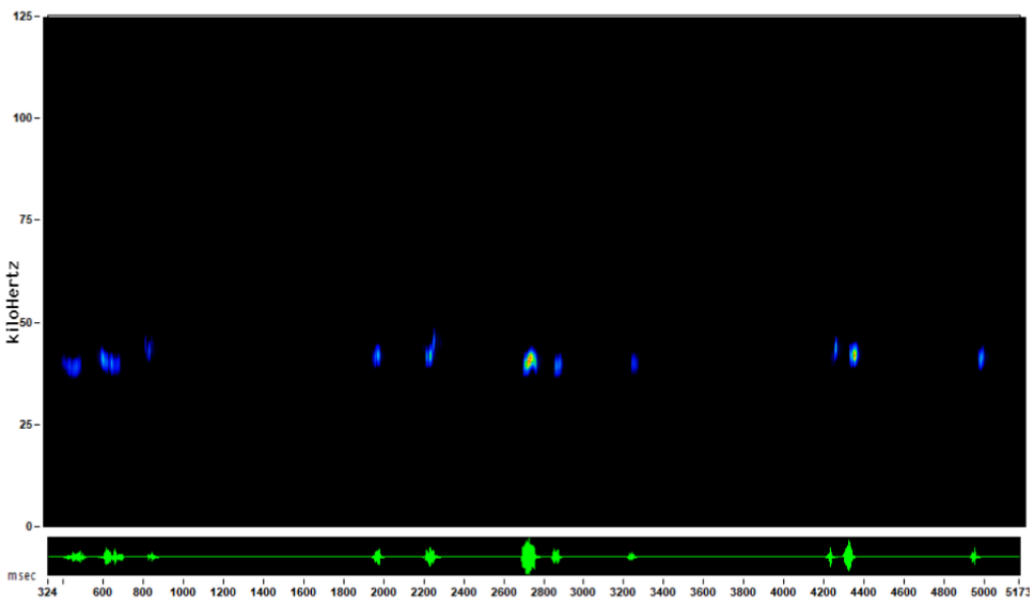
Wood Mouse: calls exceeding 65kHz like these are unlikely to be Yellow-necked Mouse (frame width 3,372ms).



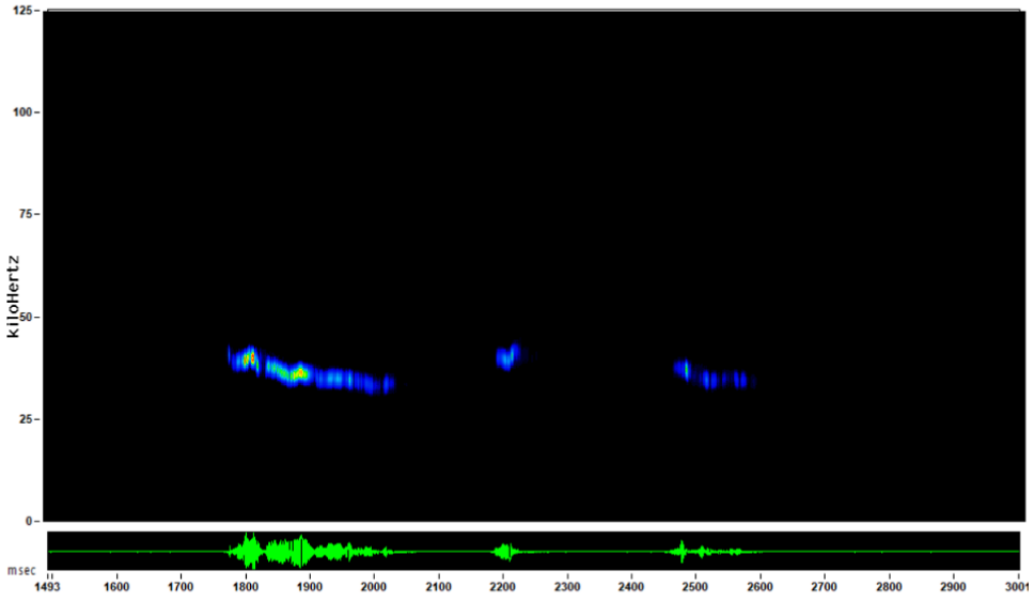
Wood Mouse: this recording includes some calls that exceed 65kHz which are unlikely to be produced by Yellow-necked Mouse (frame width 3,784ms).



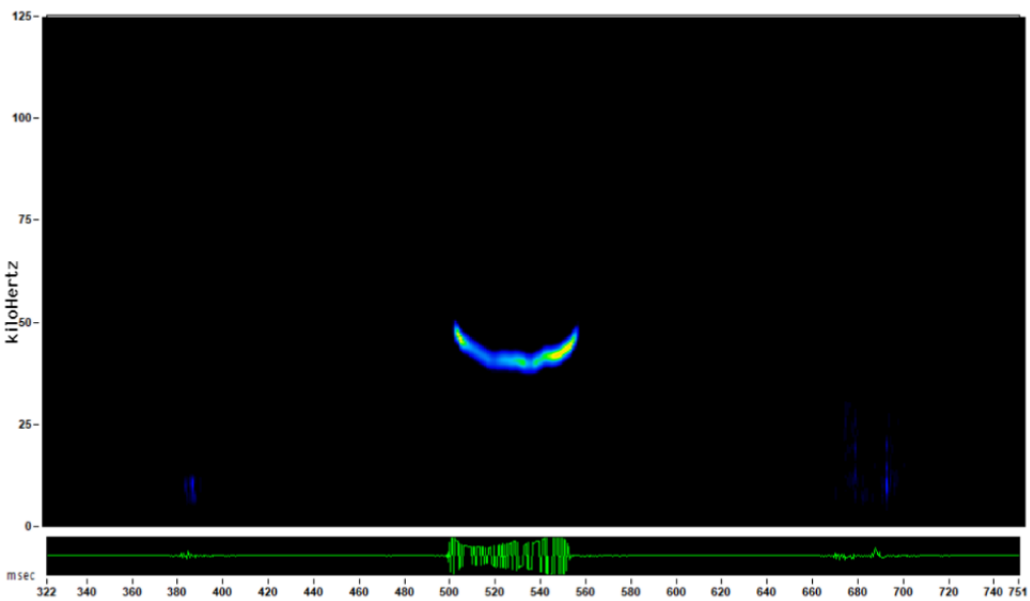
Yellow-necked Mouse: typical recording with calls between 30 and 40kHz (frame width 4,849ms).



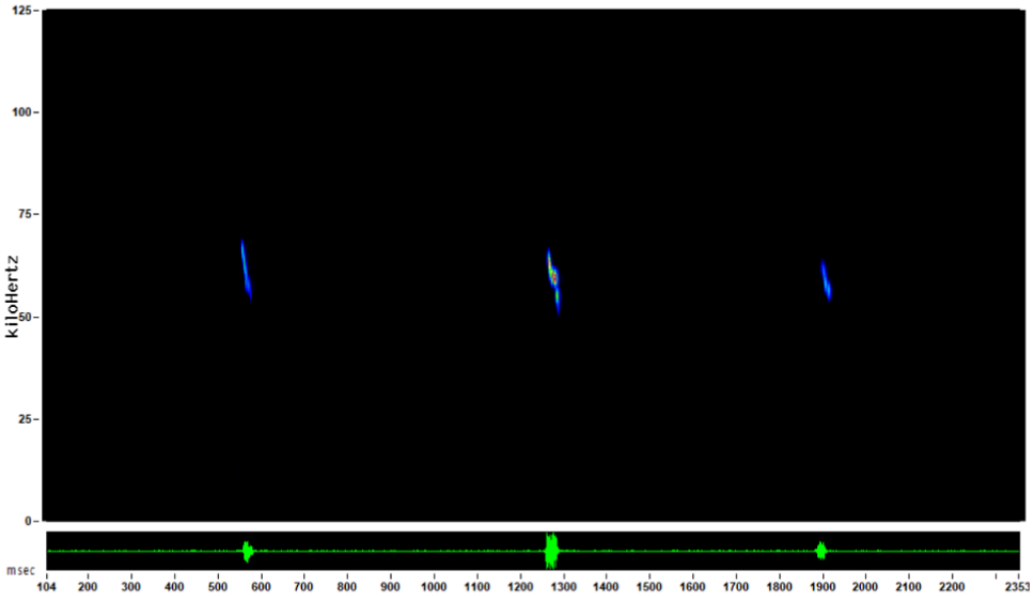
Yellow-necked Mouse: a second typical recording with calls between 30 and 40kHz (frame width 1,508ms).



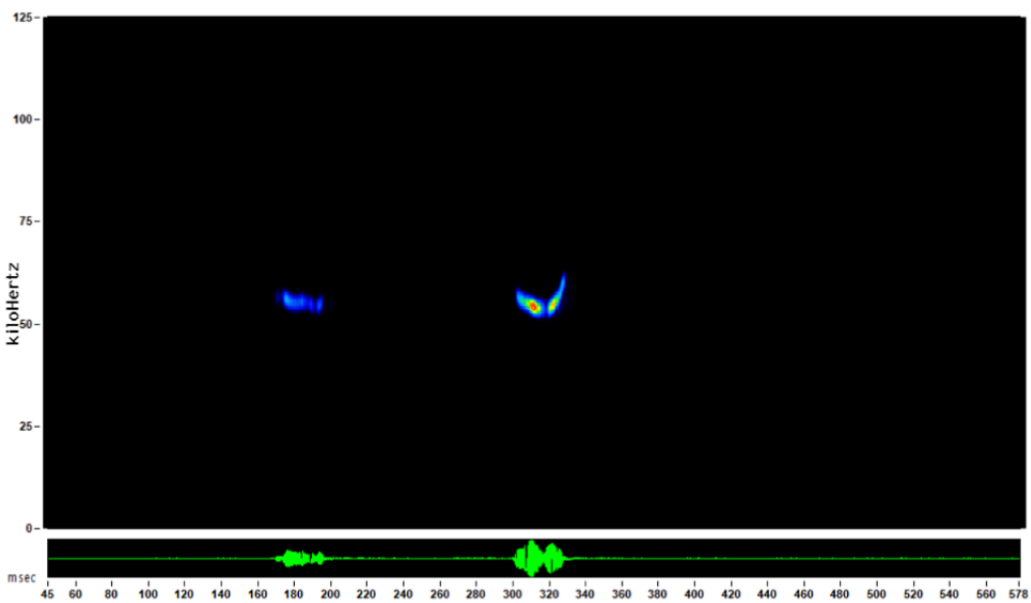
Yellow-necked Mouse: the call shape of both Wood and Yellow-necked Mouse shown here can be quite variable (frame width 429ms).



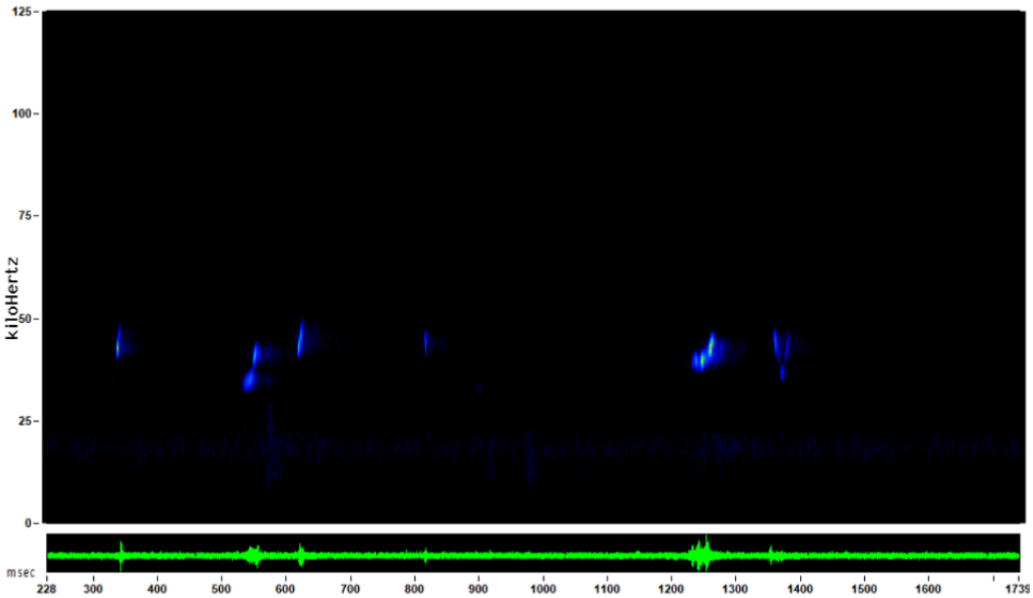
Yellow-necked Mouse: calls of between 45–59kHz as shown here are most likely to be produced by Yellow-necked Mouse (frame width 2,249ms).



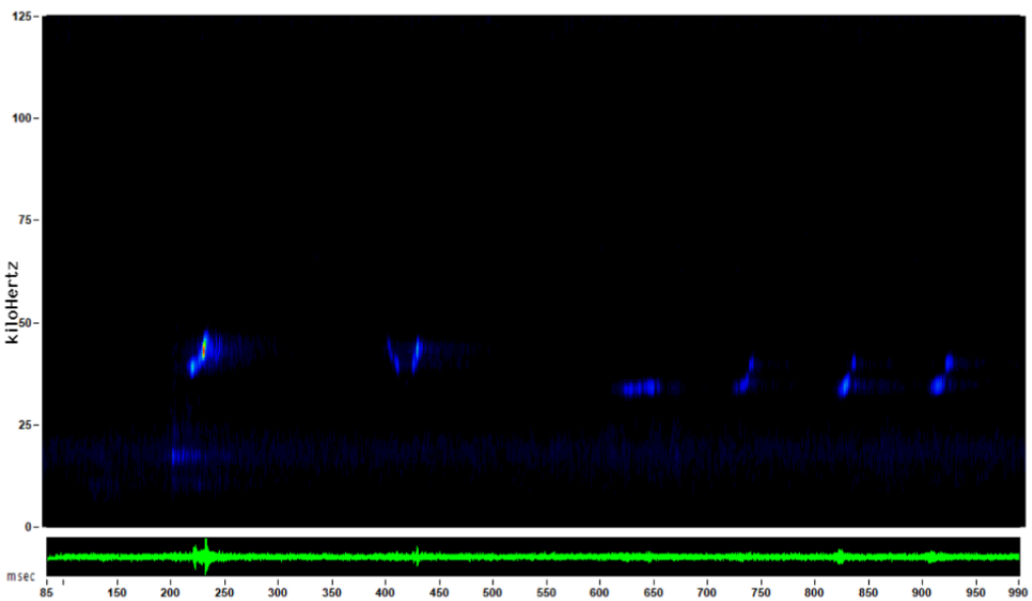
Yellow-necked Mouse: variation in Yellow-necked Mouse calls (frame width 533ms).



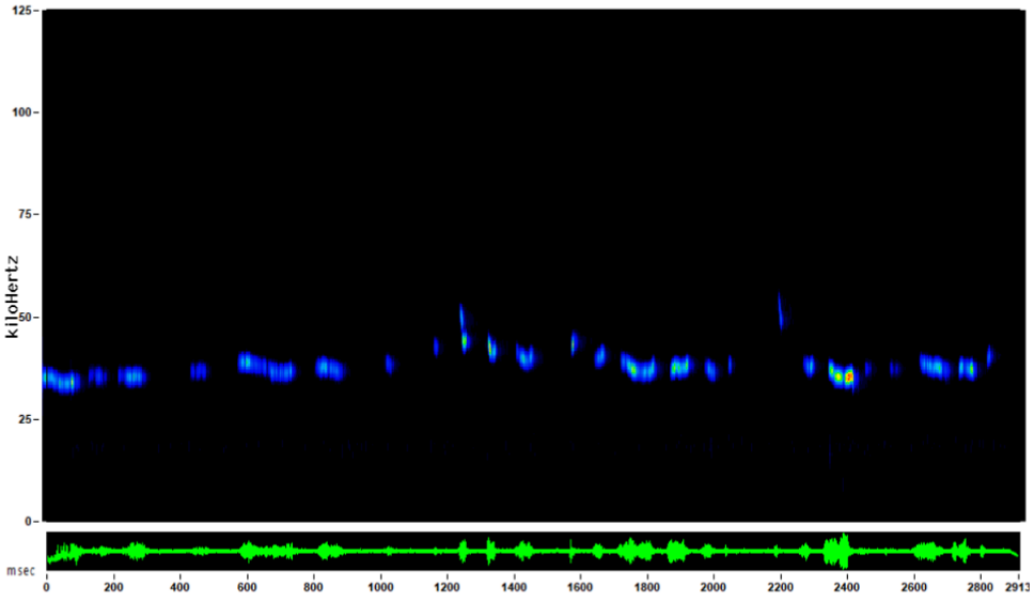
Bank Vole: typical recording of Bank Vole with calls ending between 30 and 40kHz (frame width 533ms).



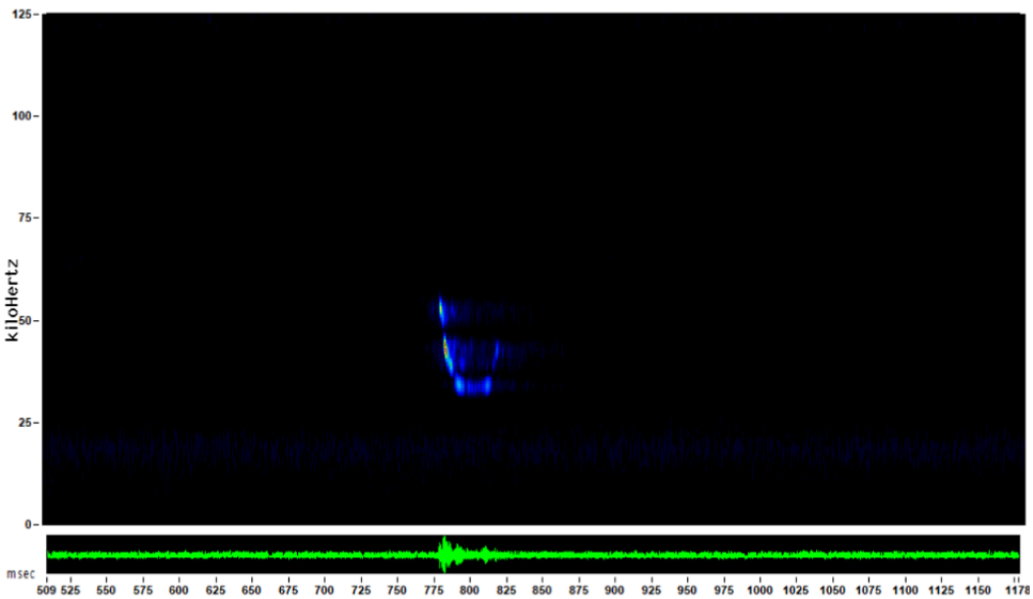
Bank Vole: showing variation in call shapes of Bank Vole (frame width 905ms).



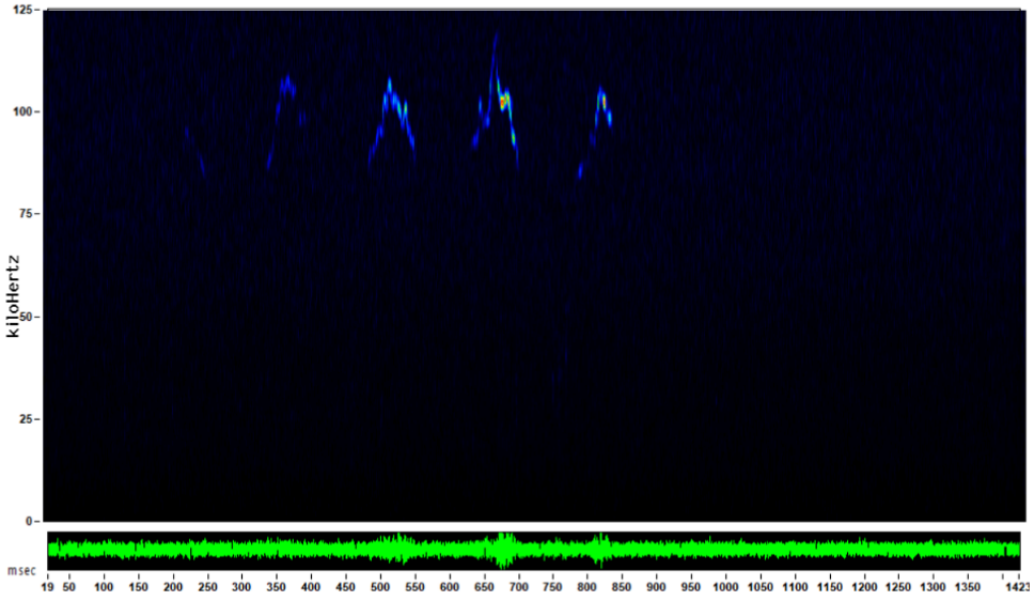
Bank Vole: further variation in call shapes of Bank Vole (frame width 2,913ms).



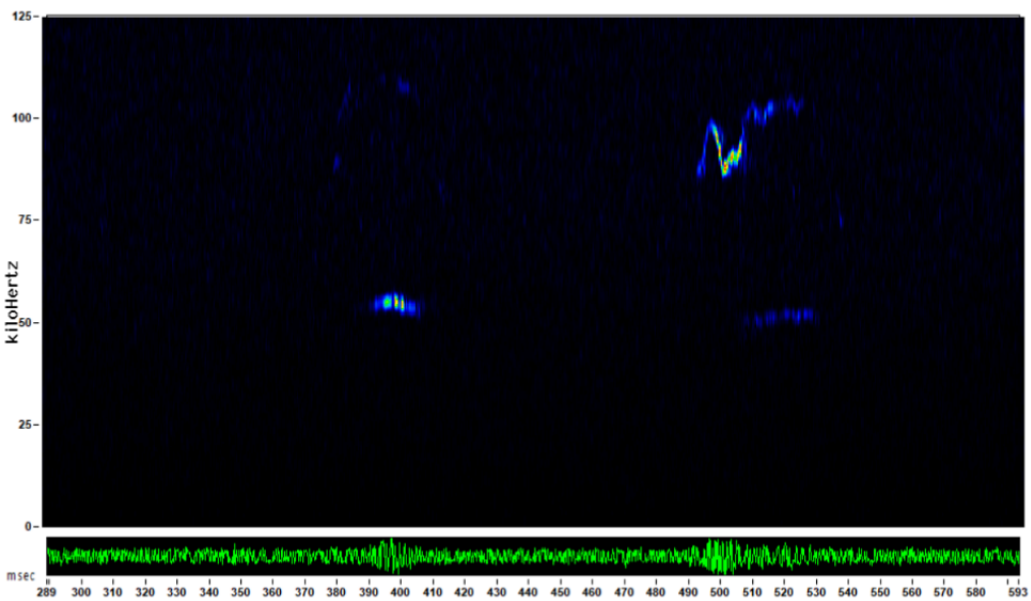
Bank Vole: call variation in Bank Vole (frame width 669ms).



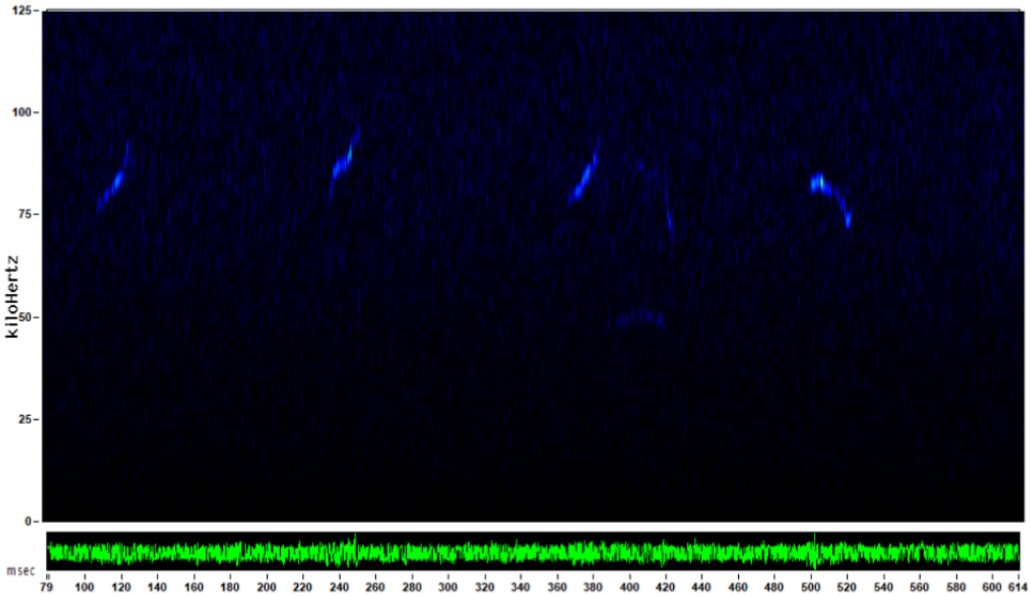
House Mouse: typical recording with calls above 80kHz, with abrupt ‘zig-zag’ changes in frequency within the call (frame width 1,404ms).



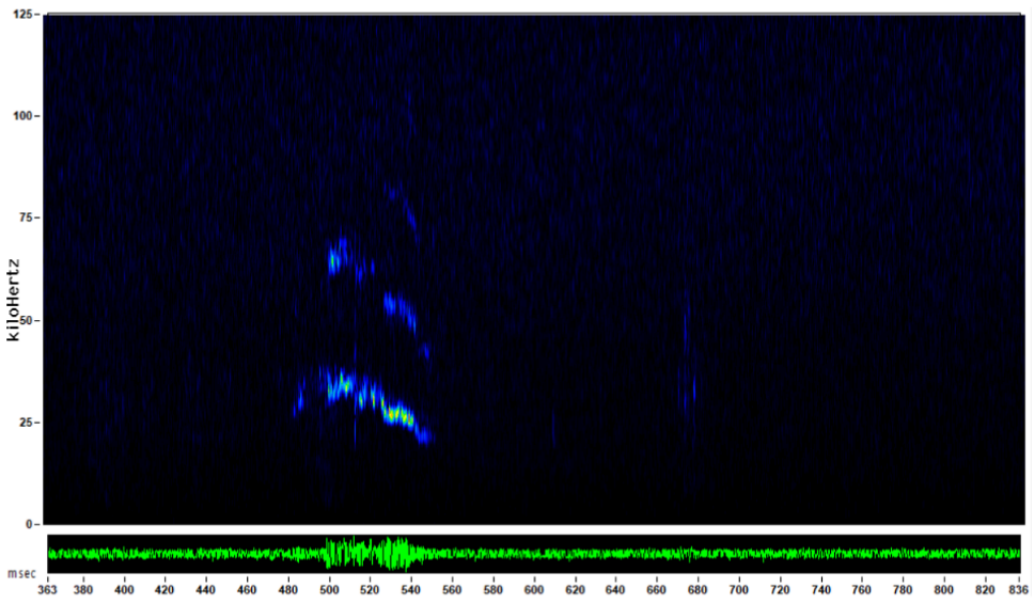
House Mouse: a second typical recording with a call above 80kHz displaying abrupt ‘zig-zag’ changes in frequency within the call (frame width 2,913ms).



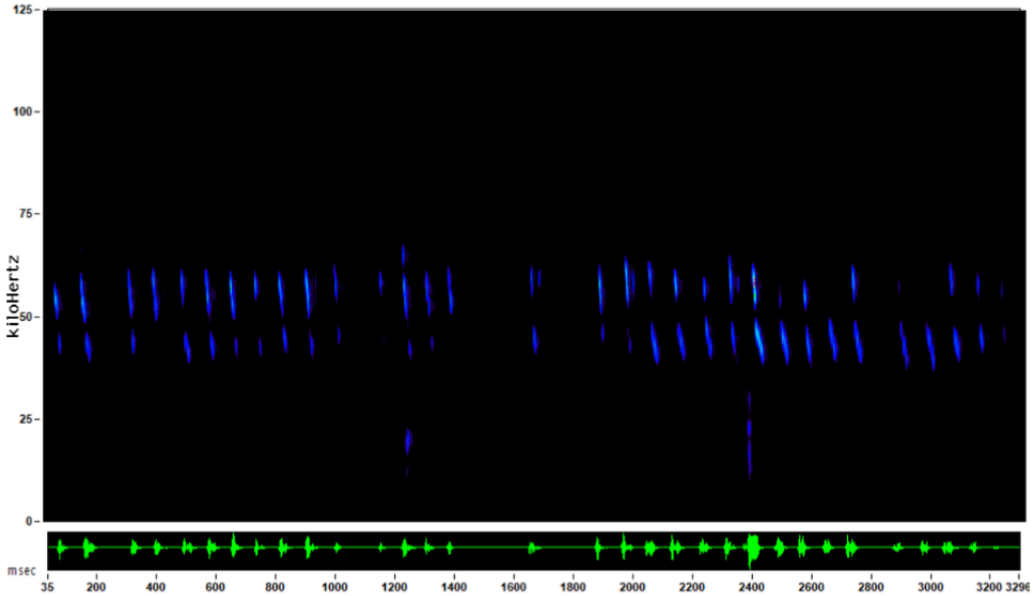
House Mouse: variation in high frequency calls of this species (frame width 2,913ms).



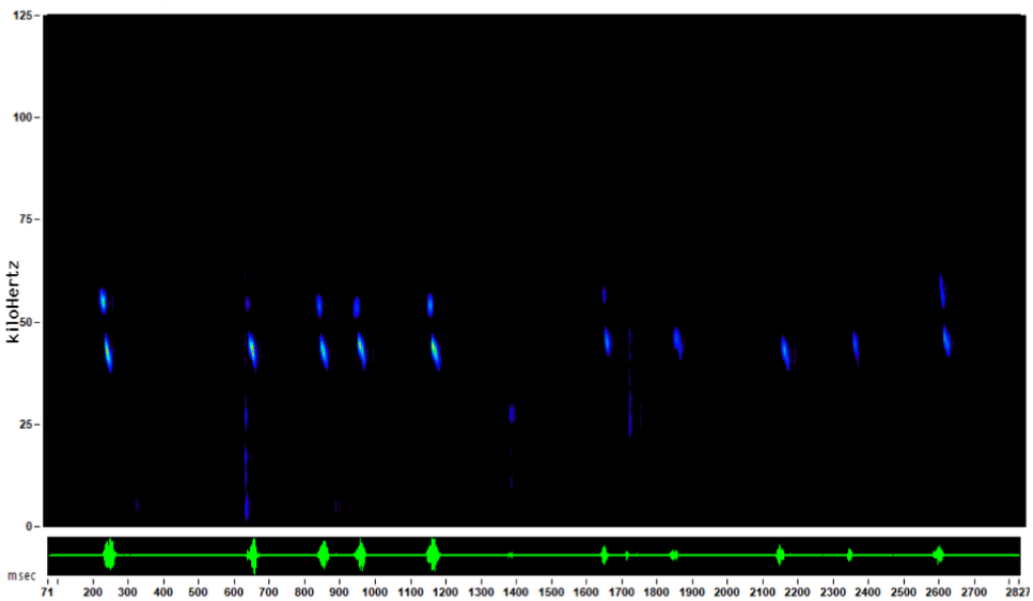
House Mouse: low frequency call with abrupt changes in frequency (frame width 2,913ms).



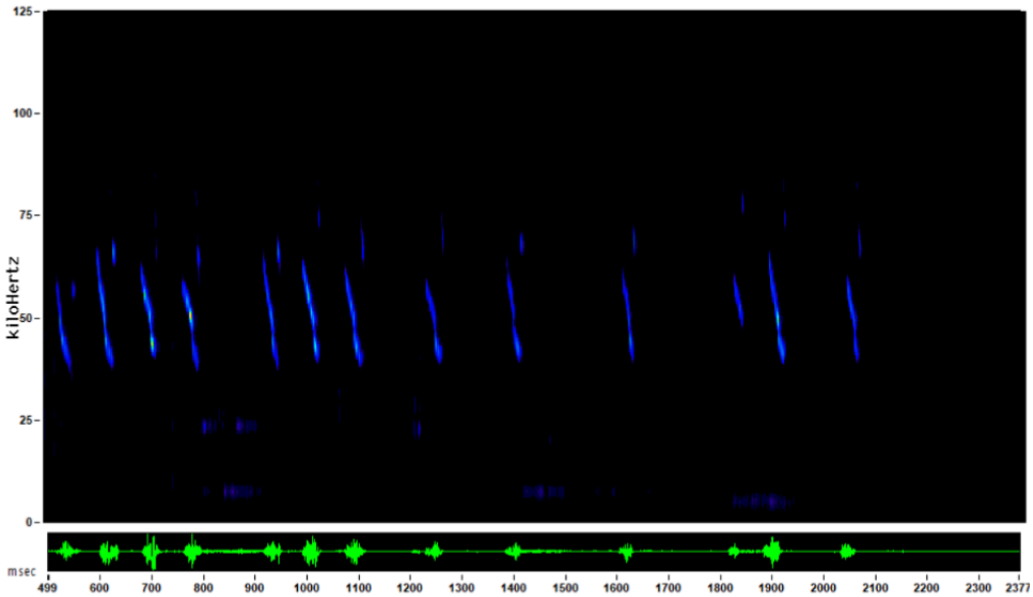
Harvest Mouse: typical recording with calls at two frequencies, one ending at about 45kHz and the other at about 55kHz (frame width 3,261ms).



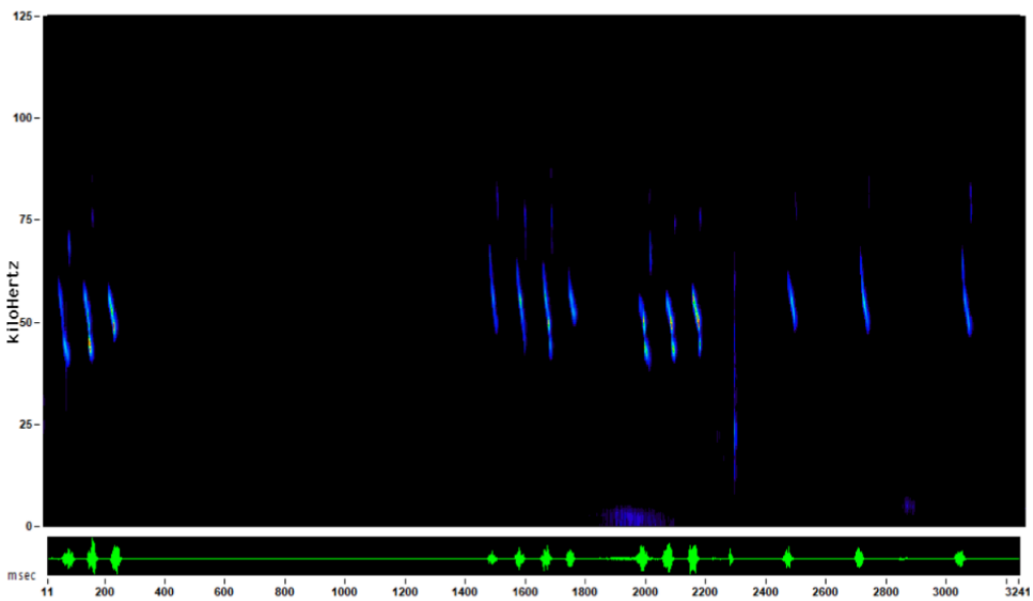
Harvest Mouse: typical recording with short calls at two frequencies, one ending at about 45kHz and the other at about 55kHz (frame width 2,756ms).



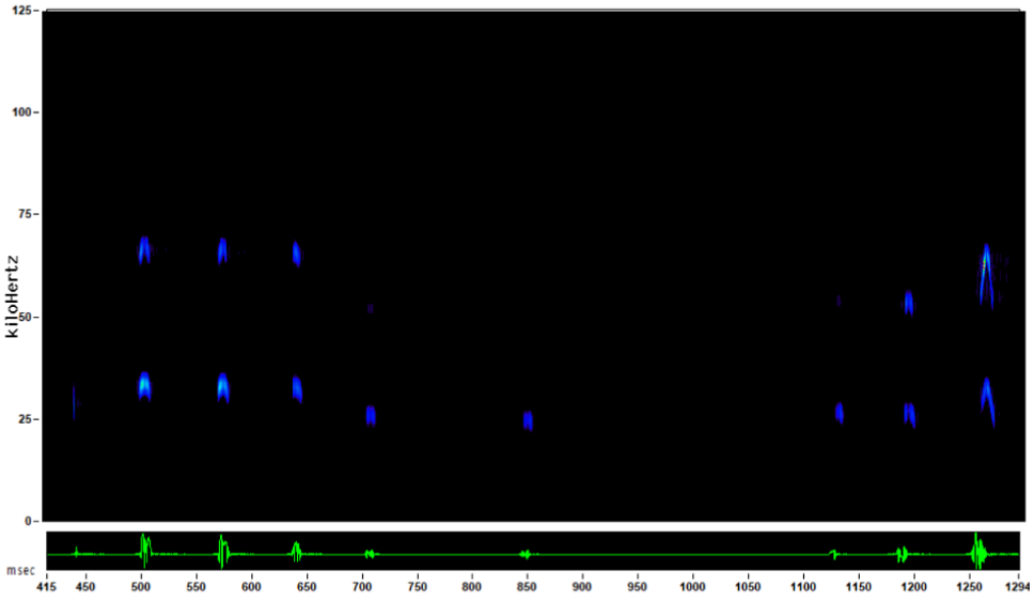
Harvest Mouse: typical recording within range of variation with calls at two frequencies (frame width 1,878ms).



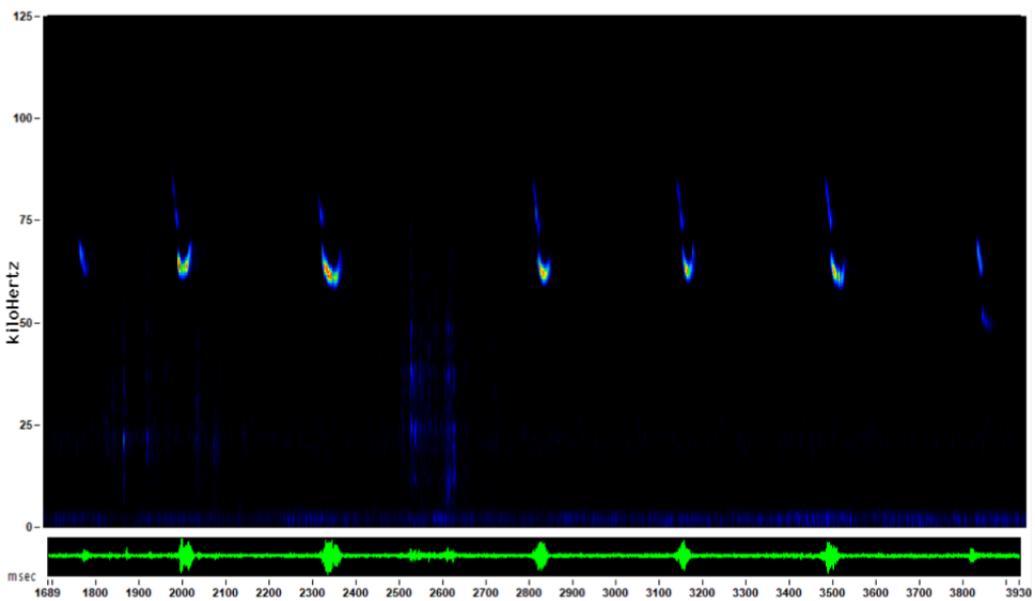
Harvest Mouse: typical recording within range of variation with calls at two frequencies (frame width 3,230ms).



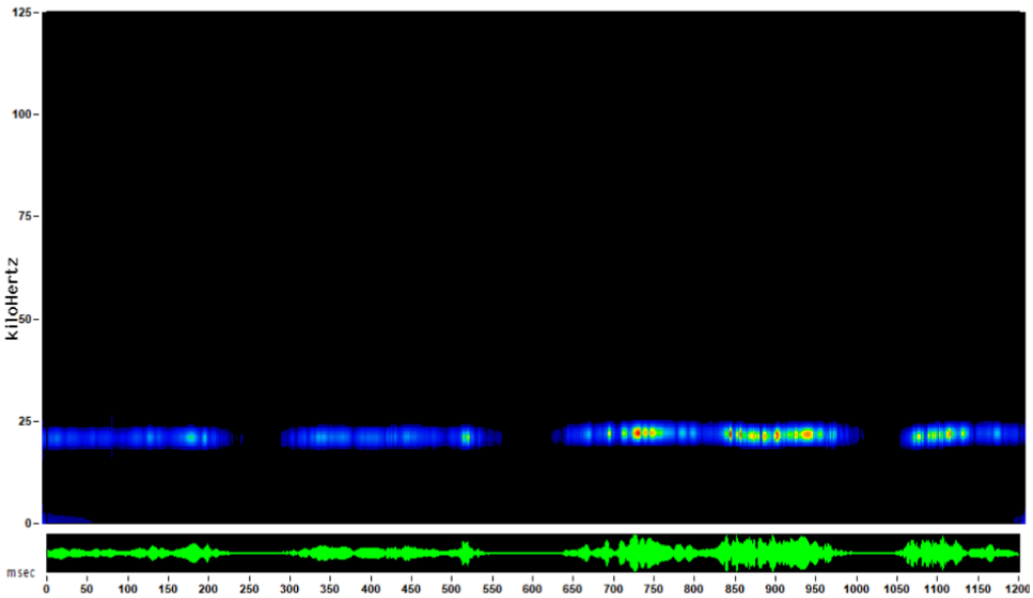
Harvest Mouse: inverted u-shape calls at two frequencies (frame width 879ms).



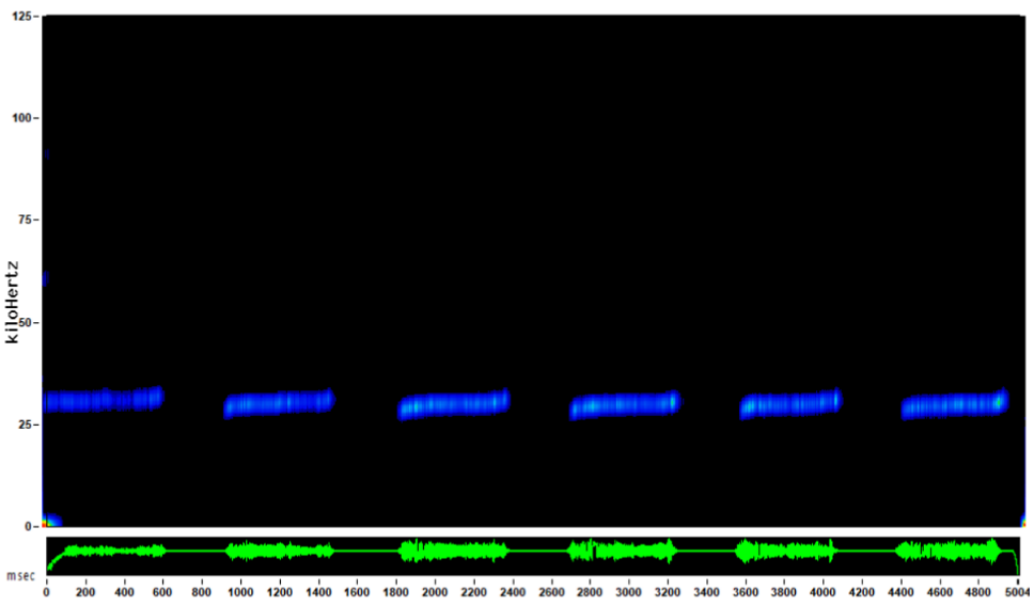
Harvest Mouse: inverted u-shape call with second call at higher frequency (frame width 2,241ms).



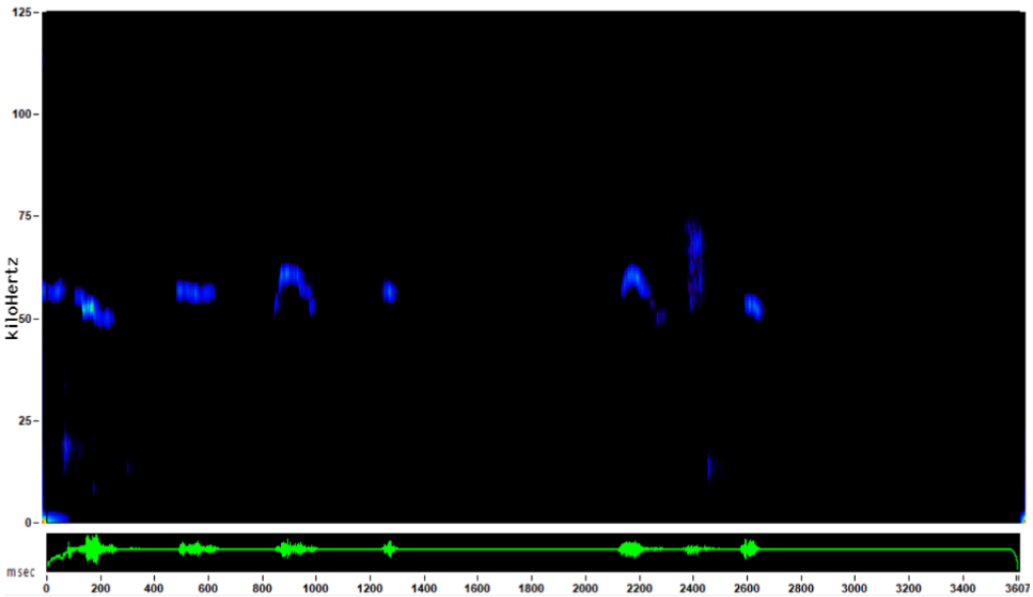
Brown Rat: typical recording with constant frequency calls of about 22kHz (frame width 1,200ms).



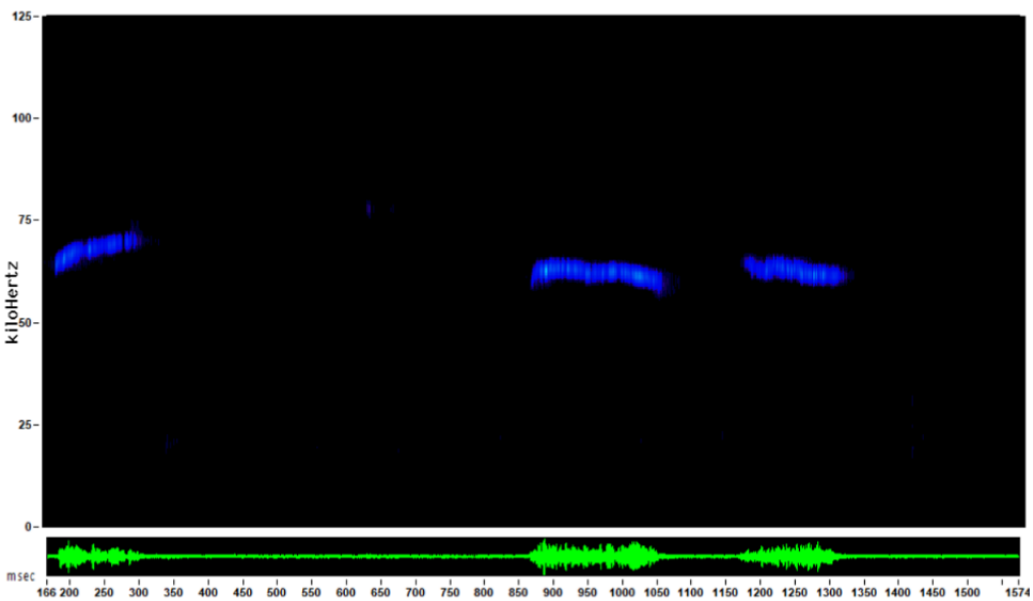
Brown Rat: less typical constant frequency calls of about 30kHz (frame width 5,004ms).



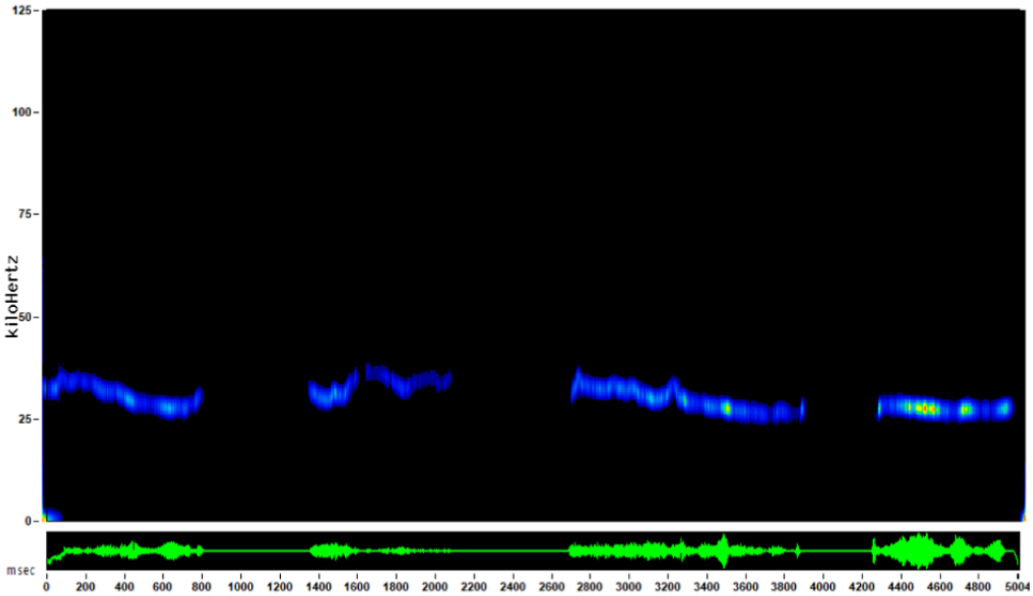
Brown Rat: typical calls of about 45kHz (frame width 3,607ms).



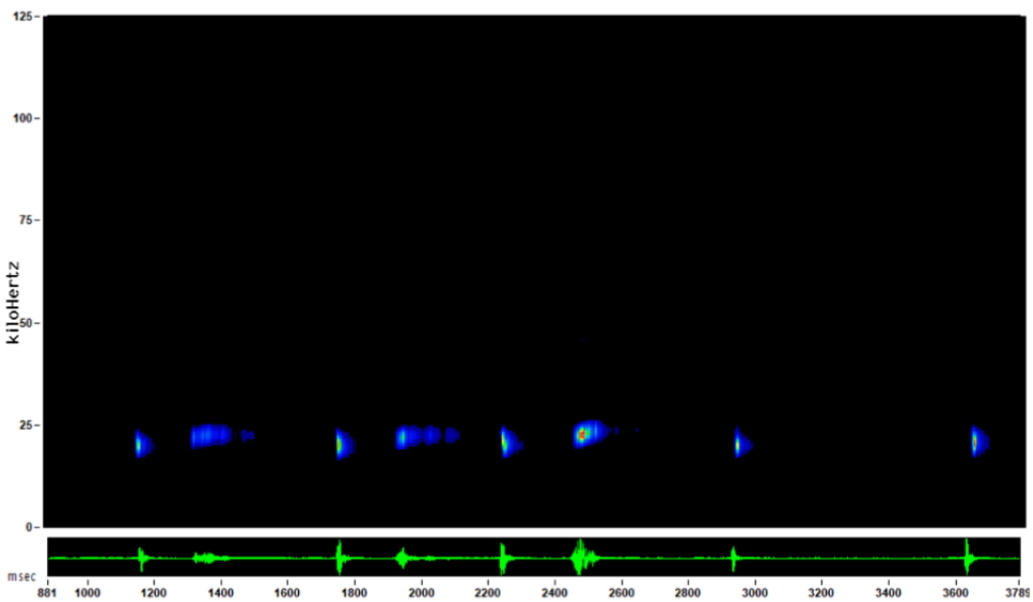
Brown Rat: less typical calls of about 60kHz (frame width 3,607ms).



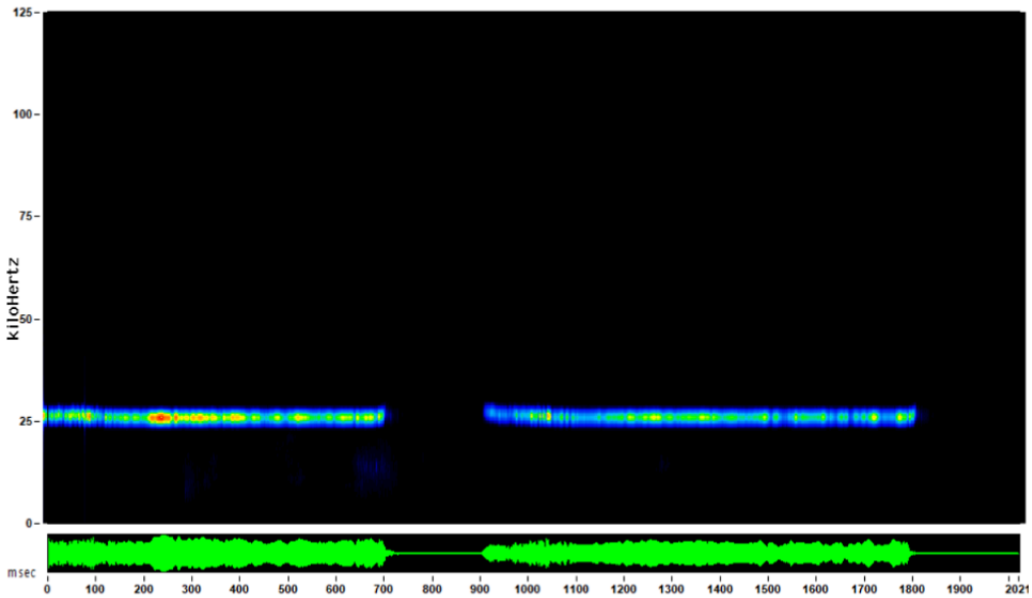
Brown Rat: less typical calls with abrupt changes in frequency. A more typical constant frequency call is shown at the end of the sequence (frame width 5,004ms).



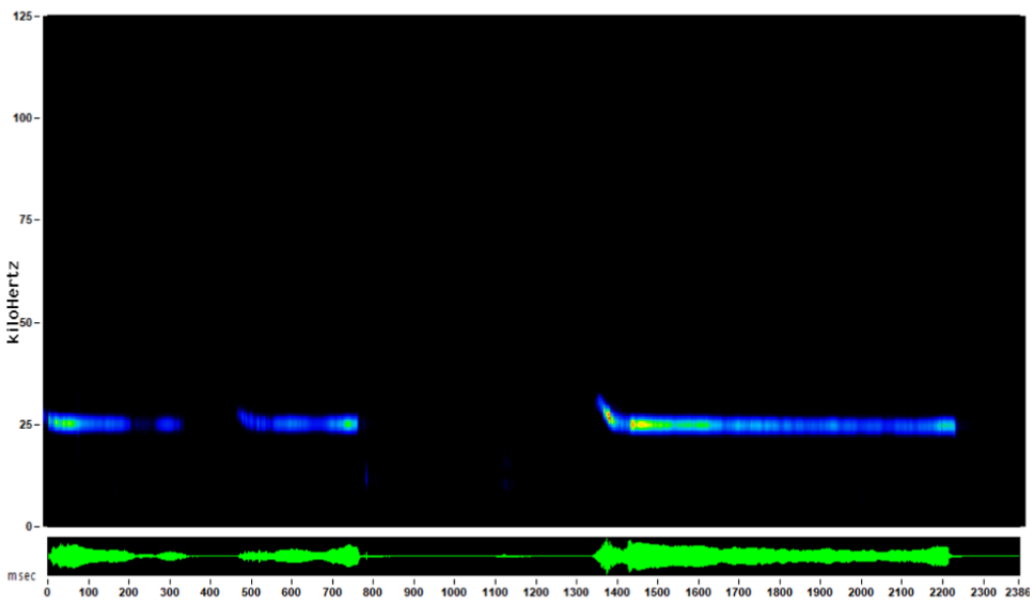
Brown Rat: less typical short calls of about 22kHz (frame width 3,789ms).



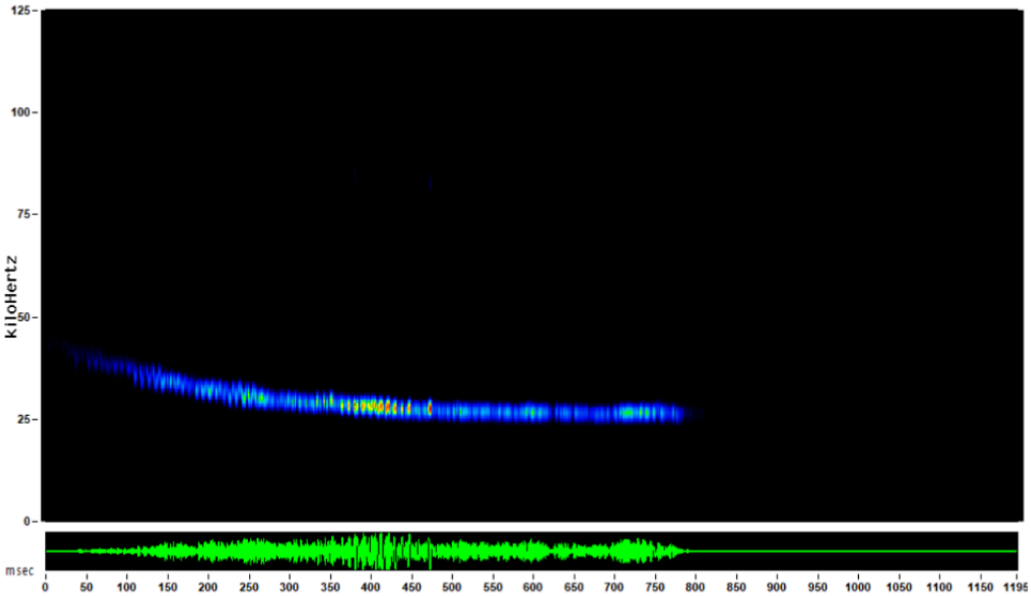
Black Rat: a typical recording with constant frequency calls of about 23kHz (frame width 2,021ms).



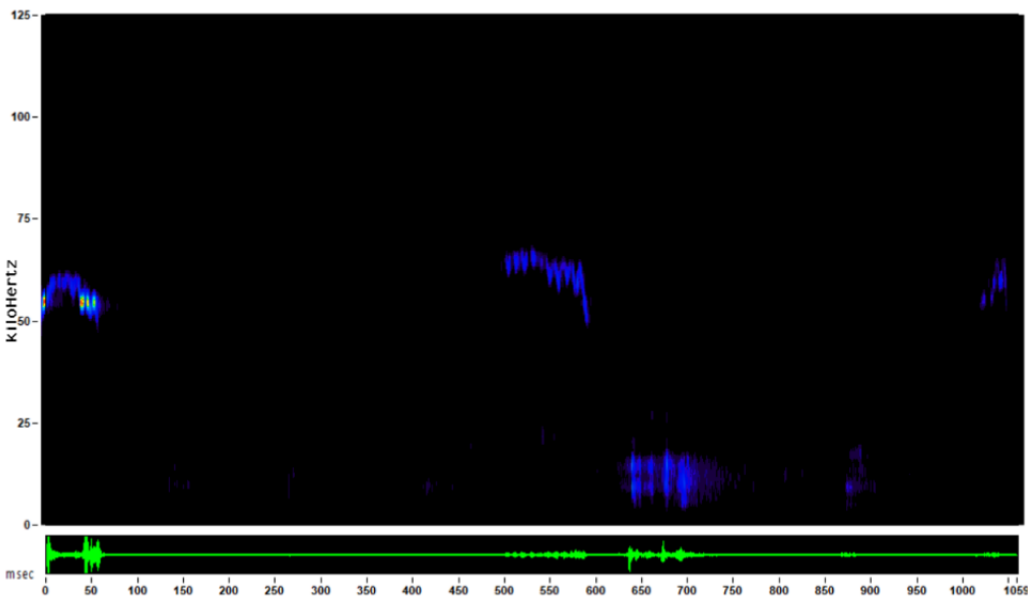
Black Rat: less typical constant frequency calls of about 24kHz (frame width 5,004ms).



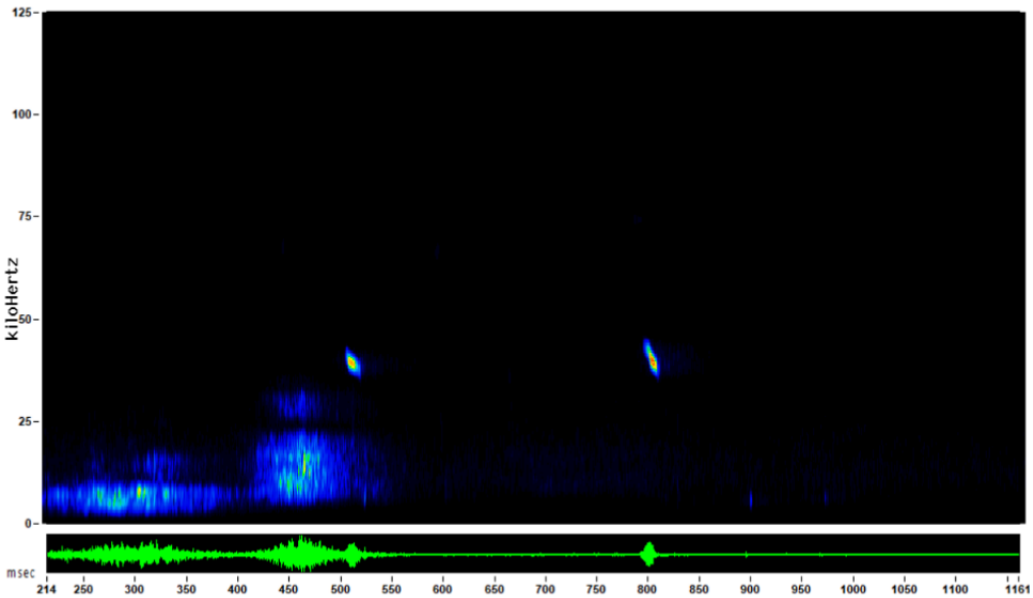
Black Rat: less typical call of about 30kHz (frame width 1,195ms).



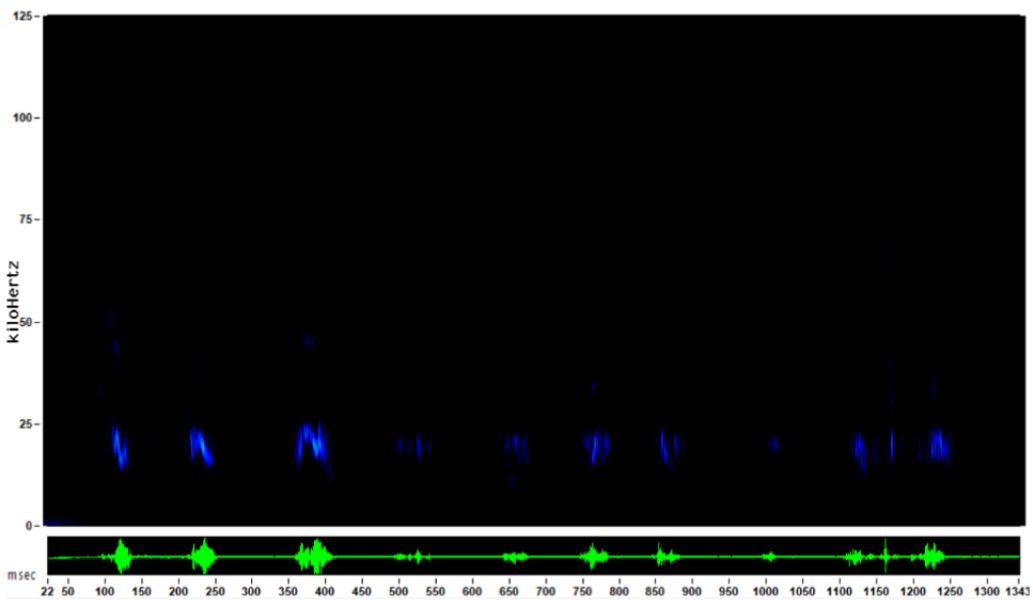
Black Rat: typical calls of about 45kHz (frame width 1,059ms).



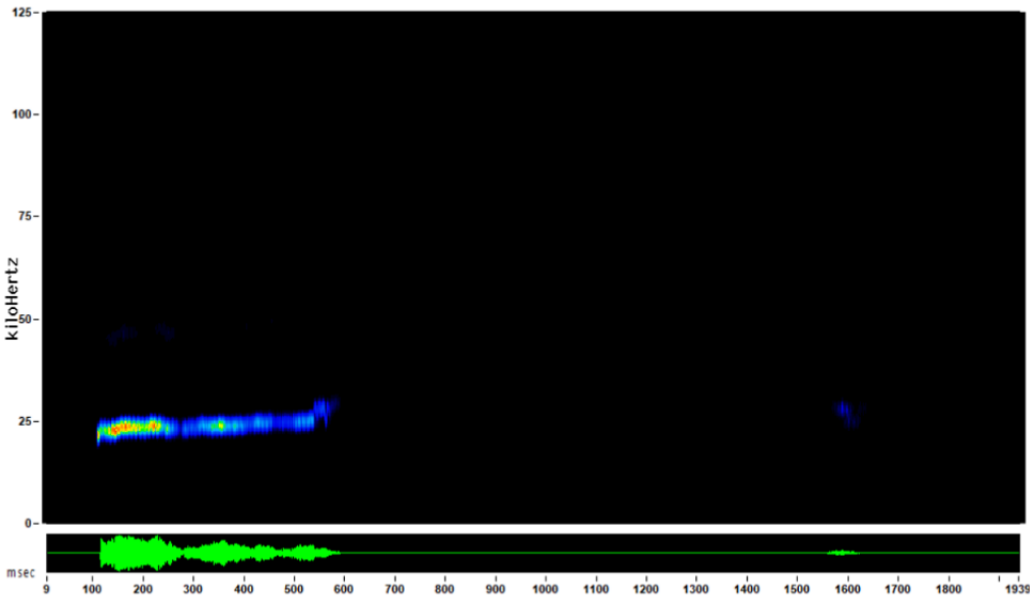
Black Rat: short calls at about 30kHz (frame width 947ms).



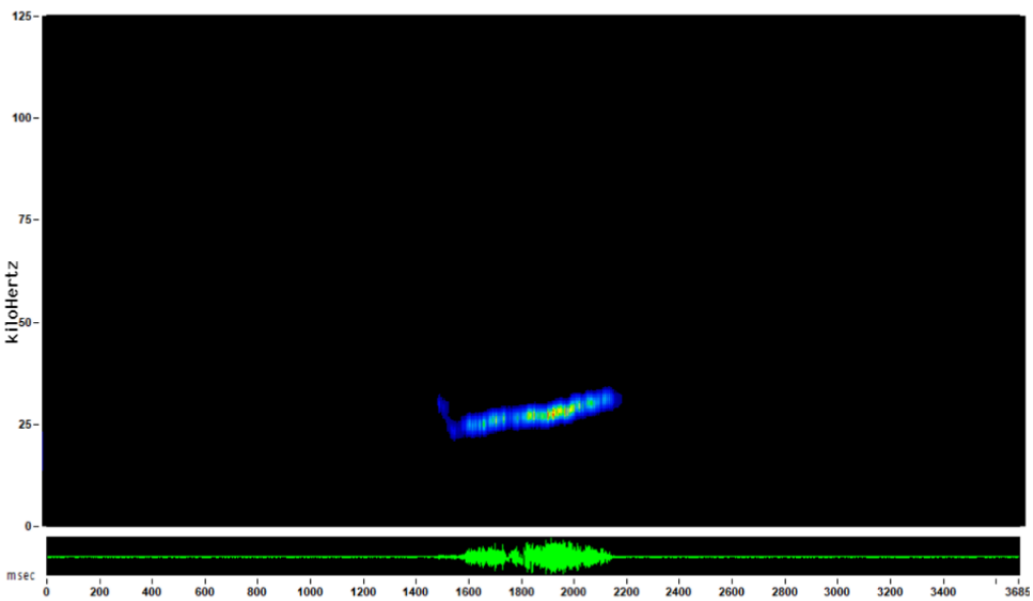
Black Rat: examples of lower frequency calls (frame width 3,789ms).



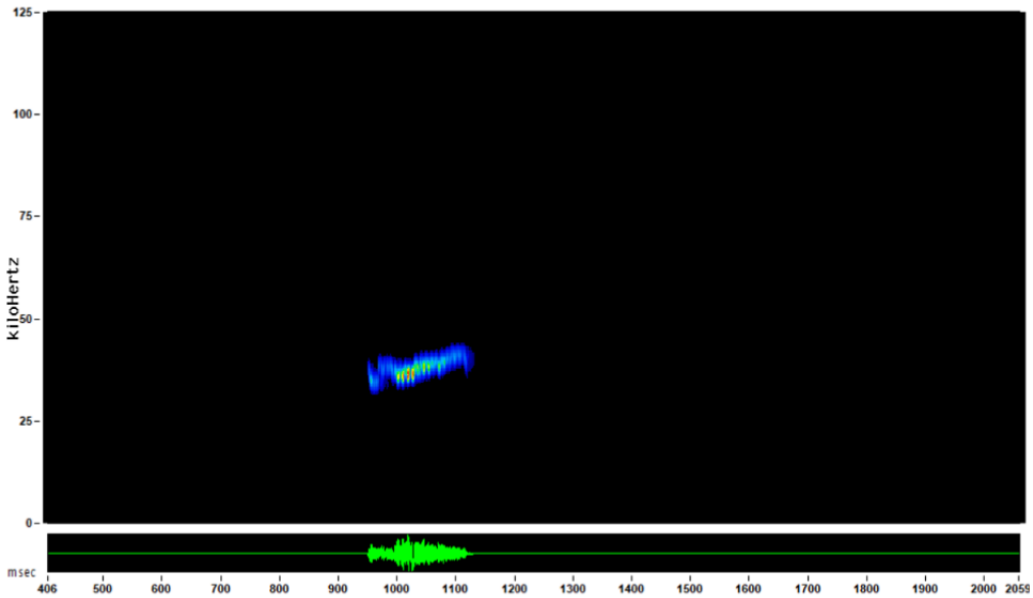
Hazel Dormouse: typical recording with call sloping upwards (frame width 1,930ms).



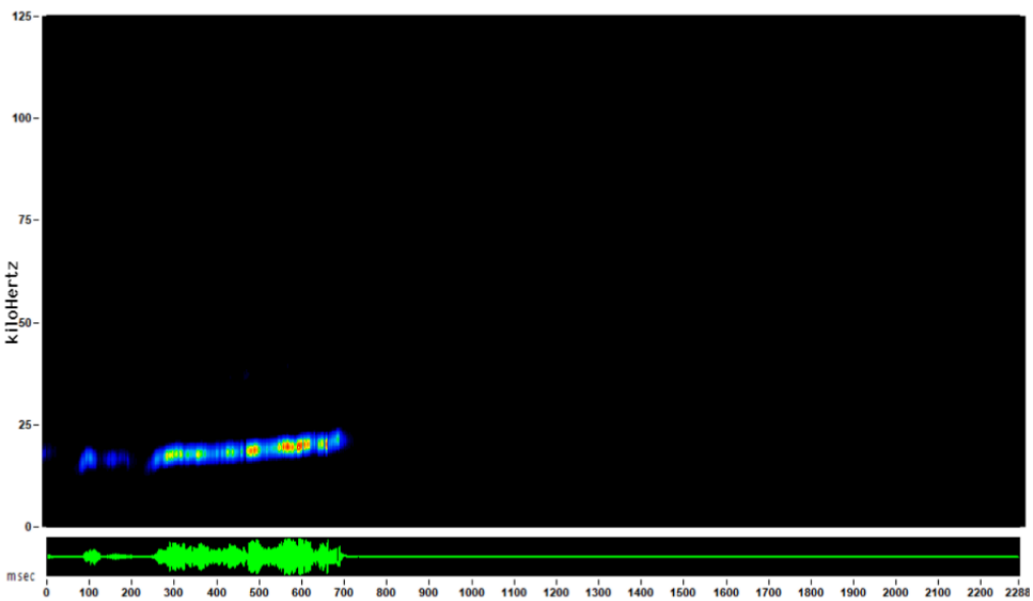
Hazel Dormouse: recording with call sloping upwards (frame width 3,685ms).



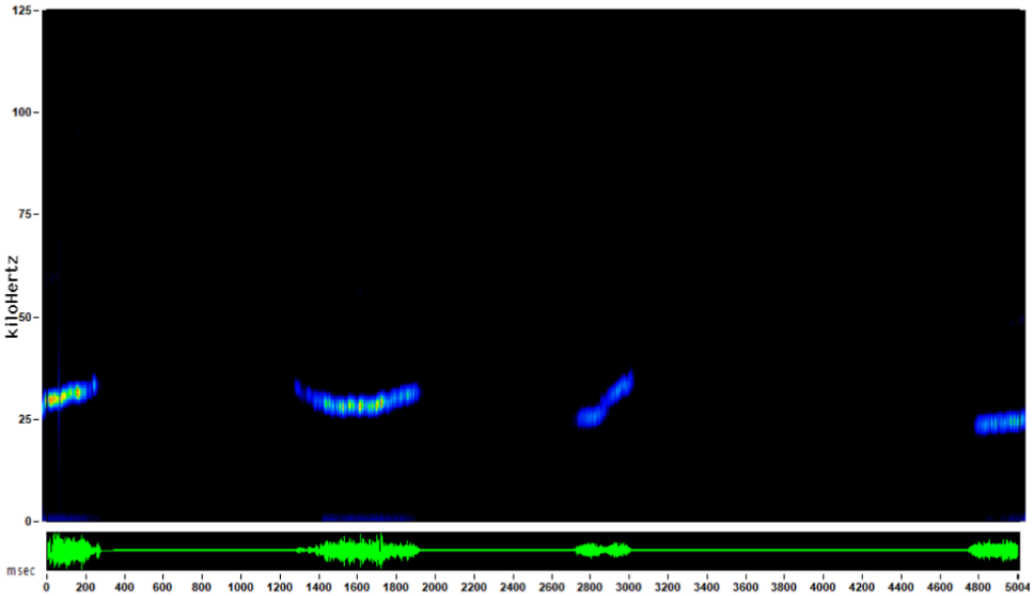
Hazel Dormouse: higher frequency example with call sloping upwards (frame width 1,653ms).



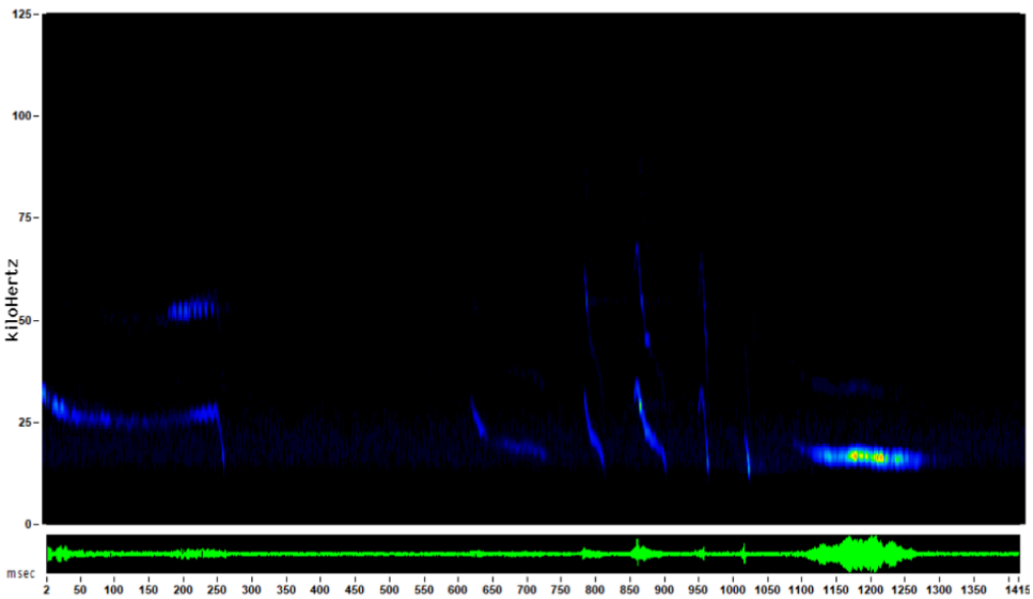
Hazel Dormouse: low frequency example with call sloping upwards (frame width 1,653ms).



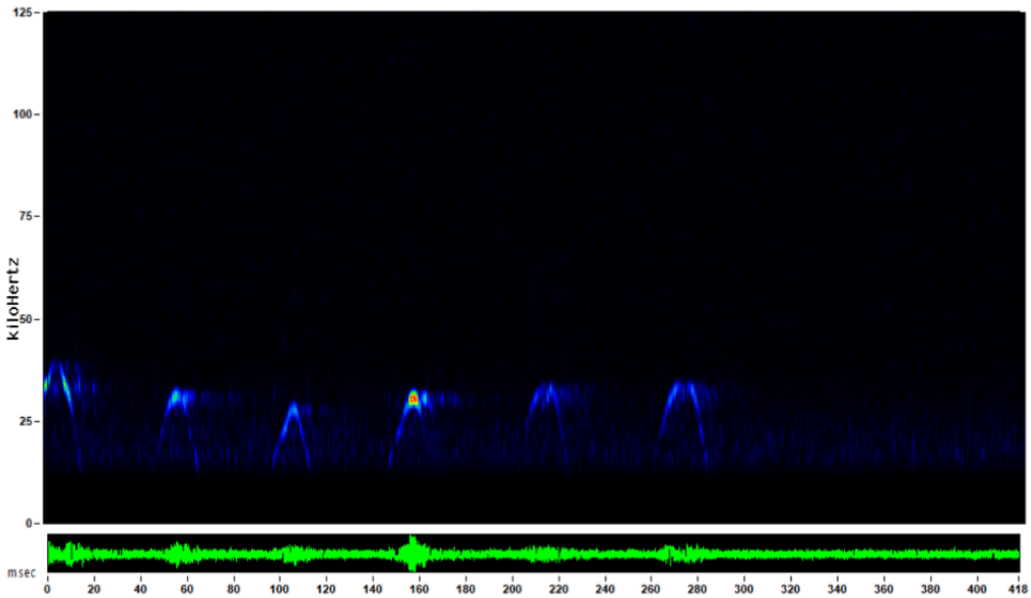
Hazel Dormouse: typical recording showing variation in call shape (frame width 5,004ms).



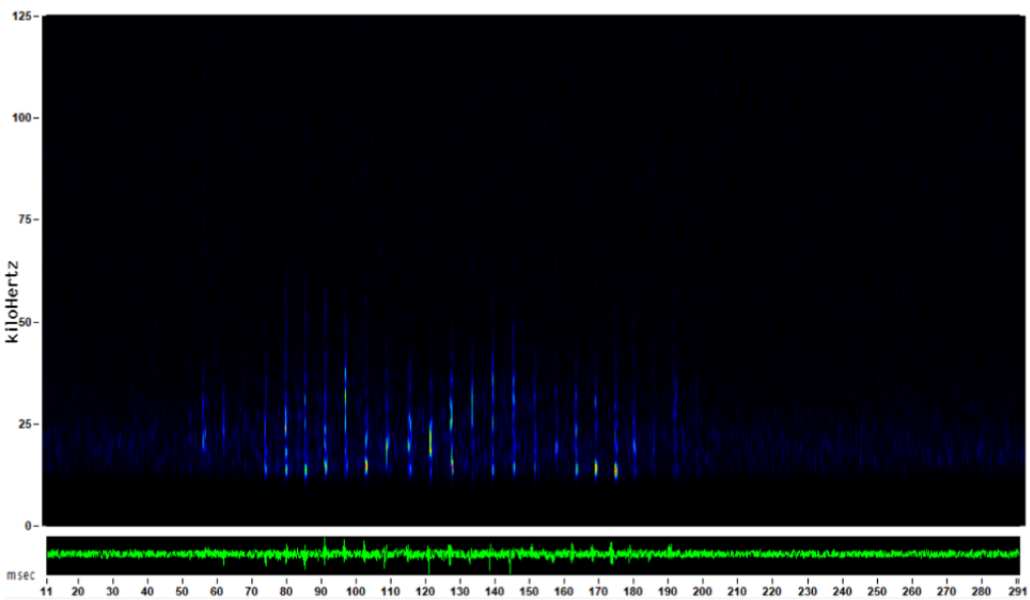
Hazel Dormouse: example of a complex call sequence (frame width 1,413ms).



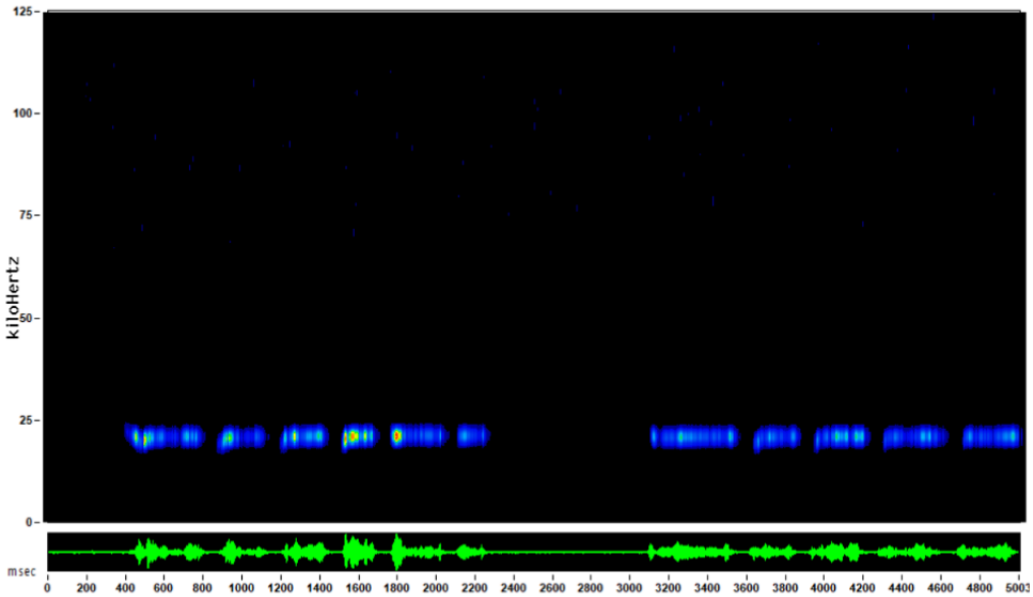
Hazel Dormouse: example of inverted v-shape calls (frame width 418ms).



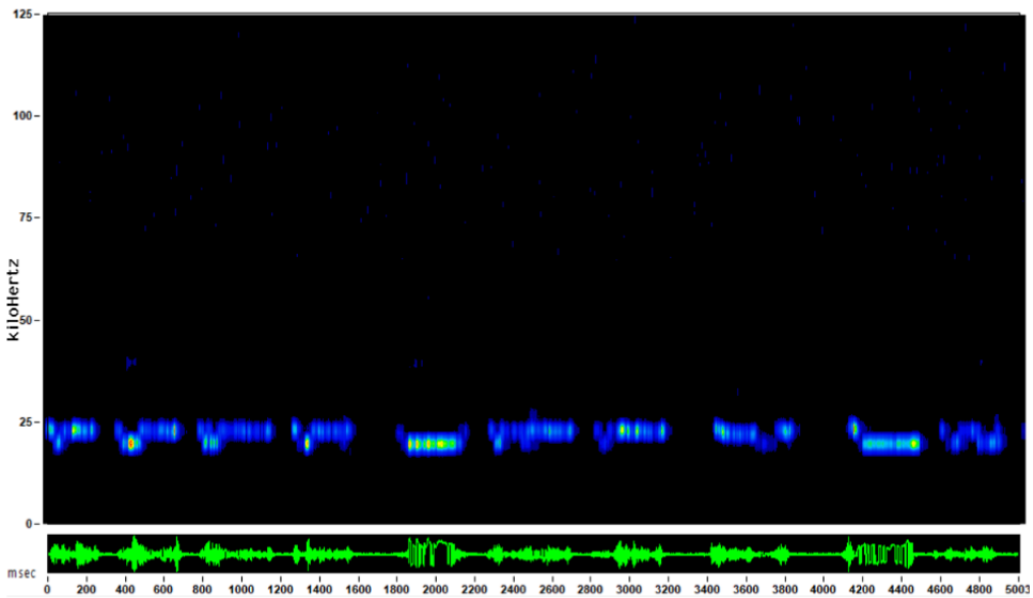
Hazel Dormouse: male advertisement calls (frame width 280ms).



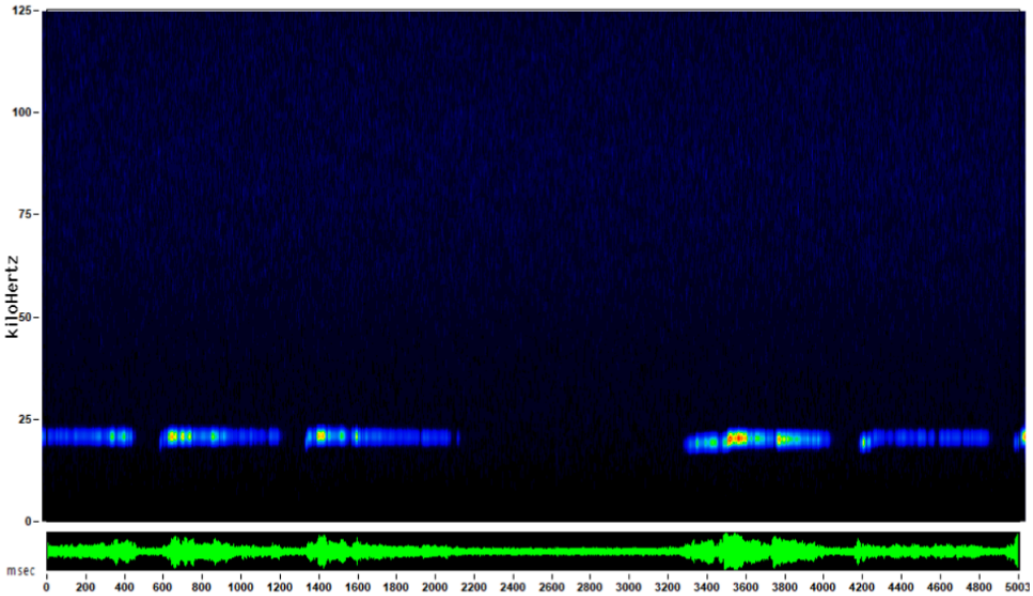
Water Vole: typical recording with step change in frequency (frame width 5,003ms).



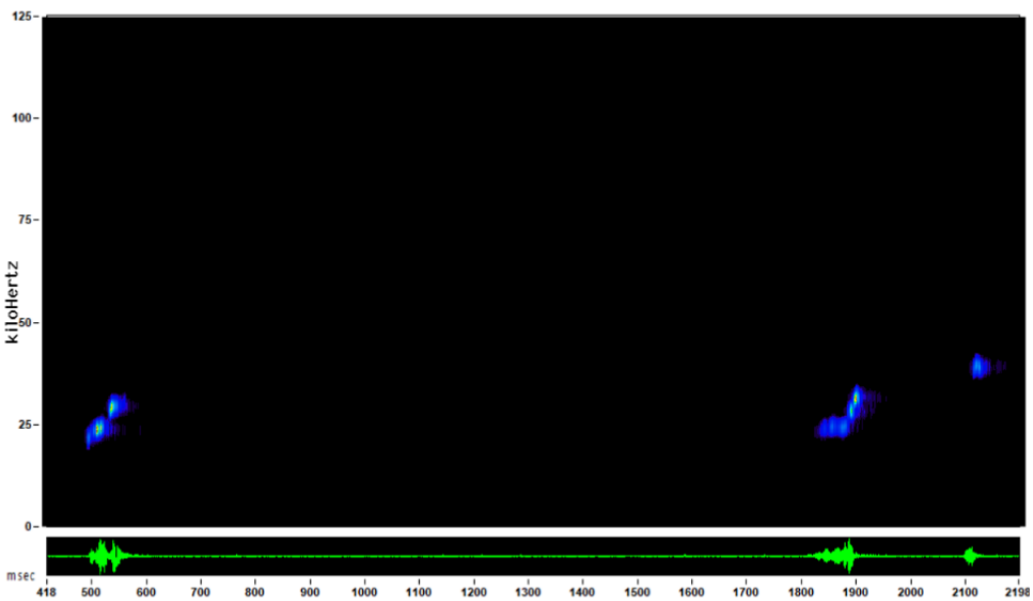
Water Vole: typical recording with step change in frequency (frame width 5,003ms).



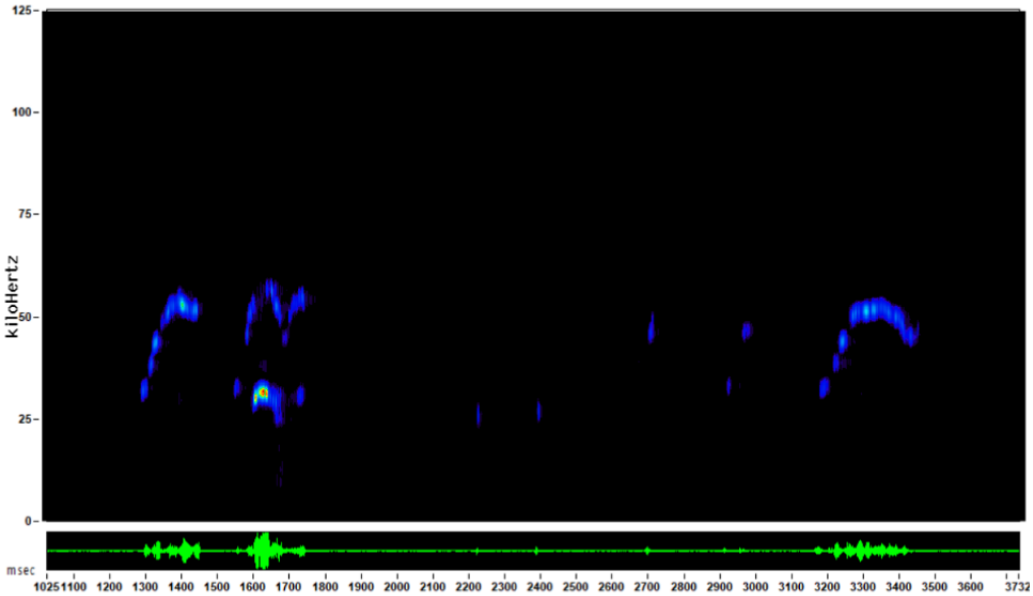
Water Vole: similar to Brown Rat, but with step change in frequency (frame width 5,003ms).



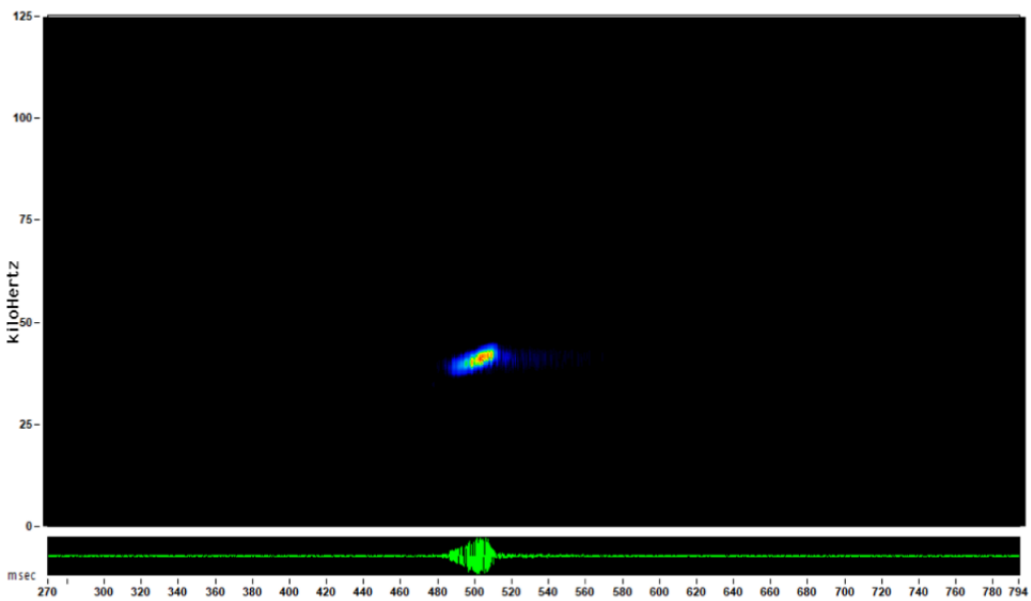
Water Vole: less typical example with abrupt change in frequency (frame width 1,780ms).



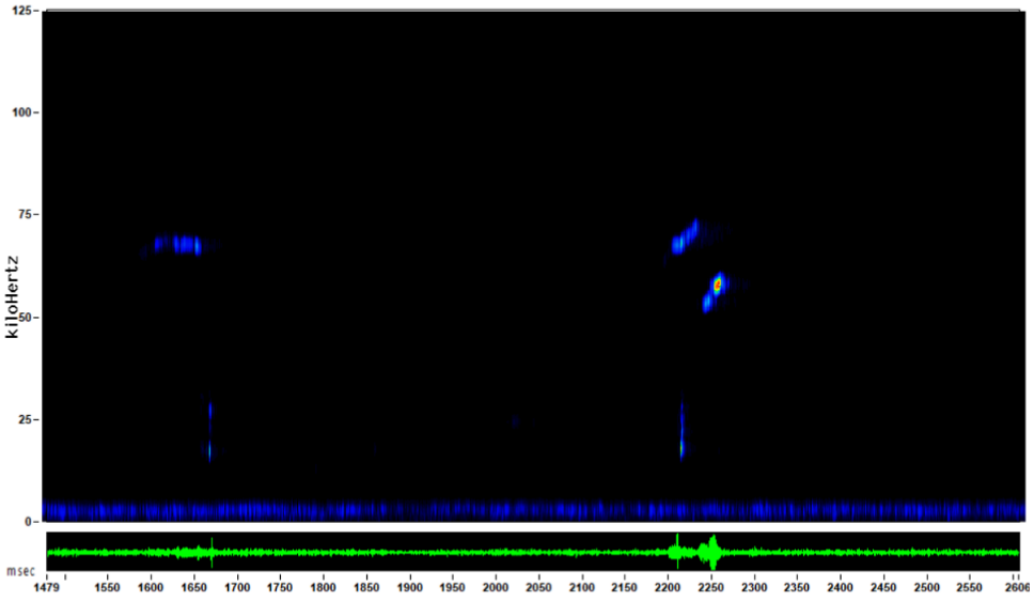
Water Vole: a complex sequence (frame width 2,707ms).



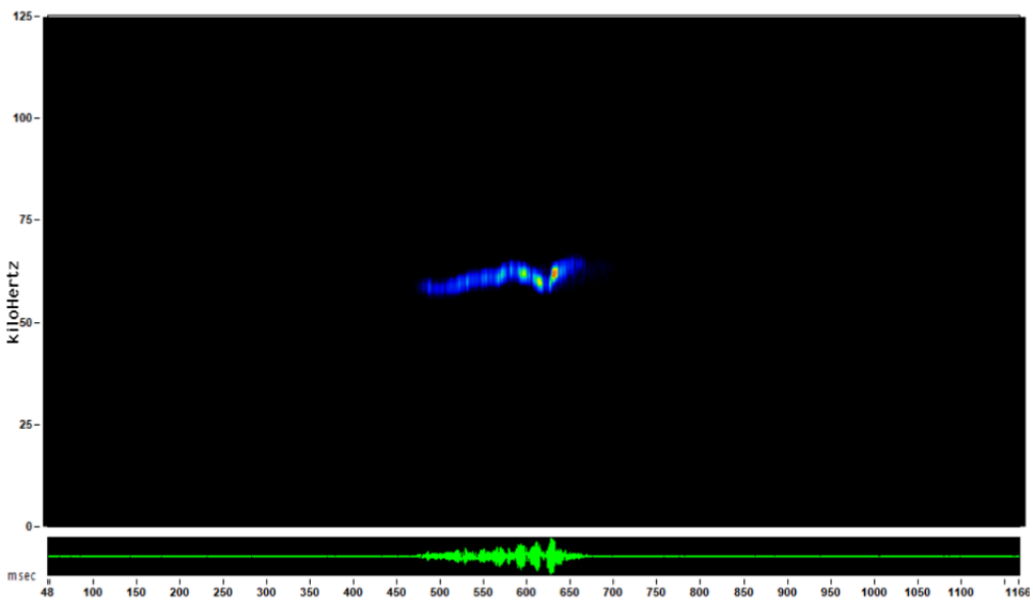
Water Vole: a less typical call with no step change in frequency (frame width 524ms).



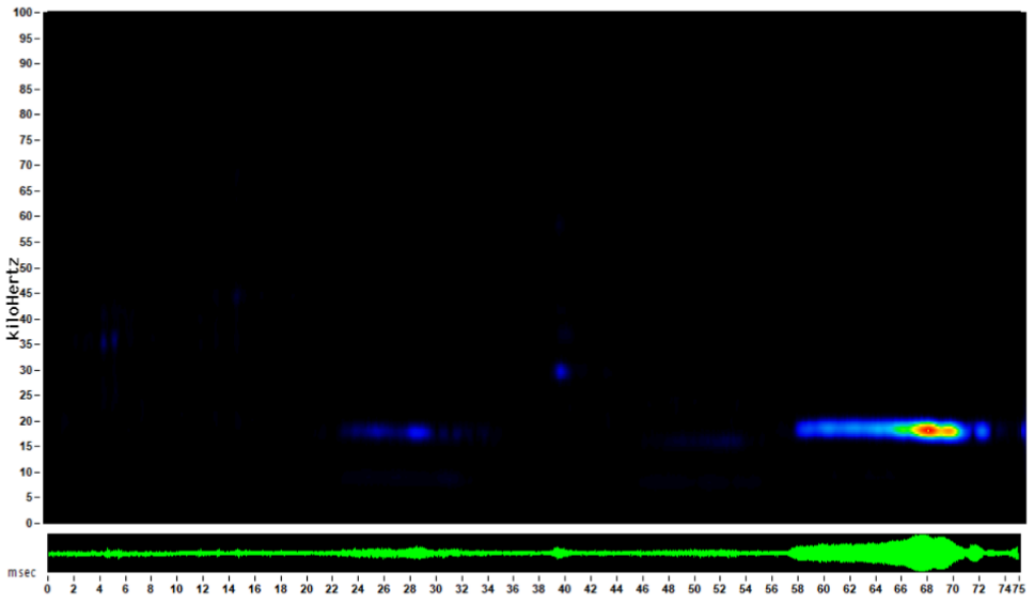
Water Vole: examples of higher frequency calls (frame width 1,127ms).



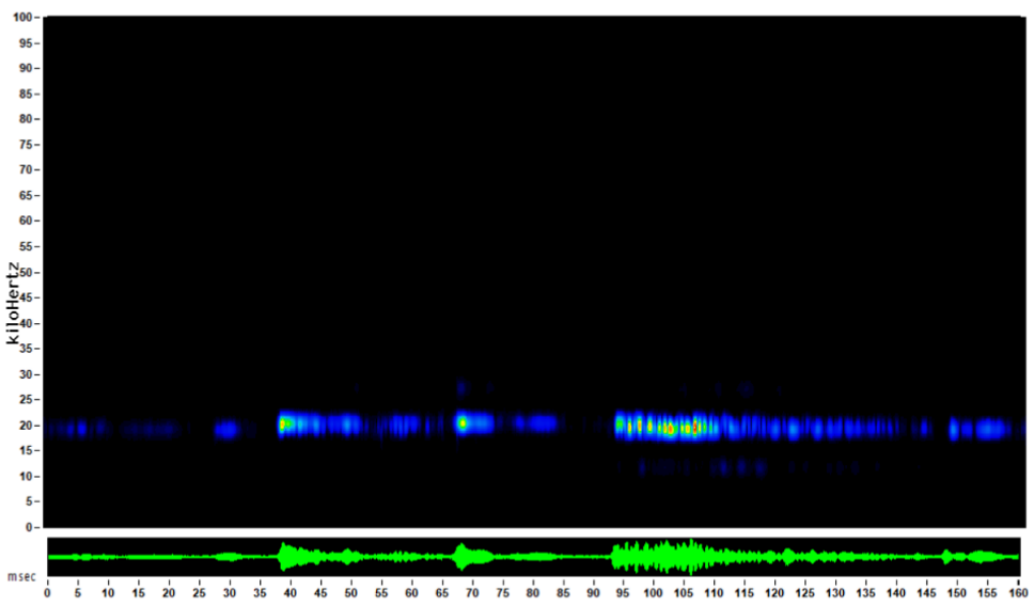
Water Vole: example of higher frequency call with step change in frequency (frame width 1,118ms).



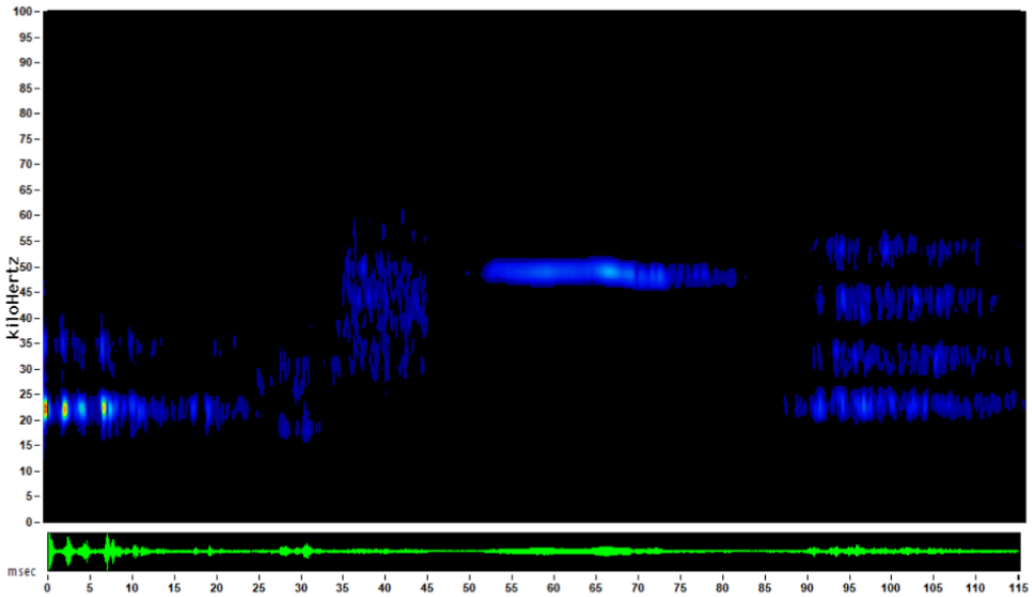
Field Vole: typical recording with call below 20kHz (frame width 7,475ms).



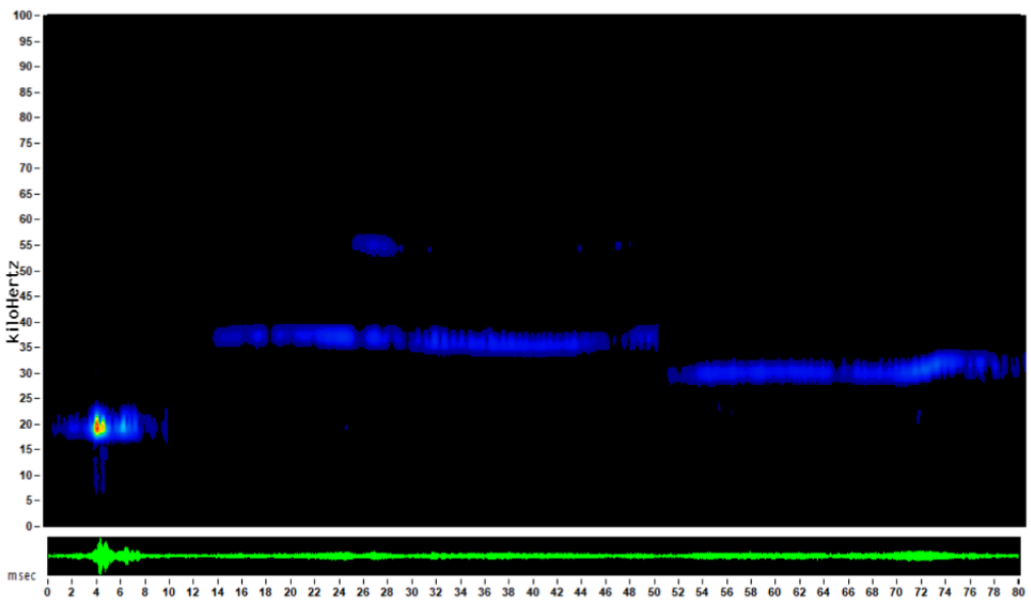
Field Vole: calls at about 20kHz (frame width 160ms).



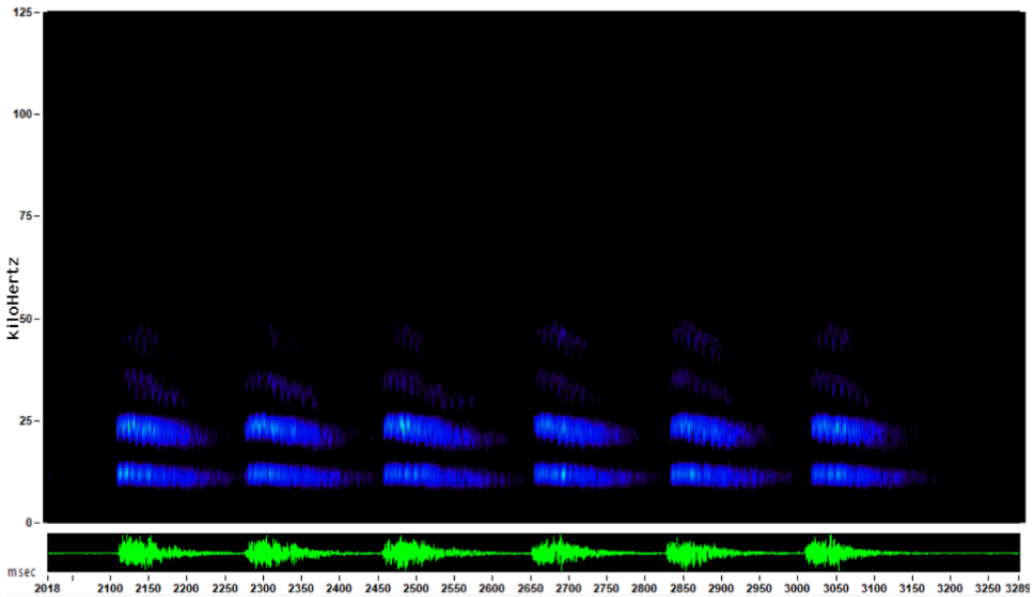
Field Vole: high frequency call (frame width 115ms).



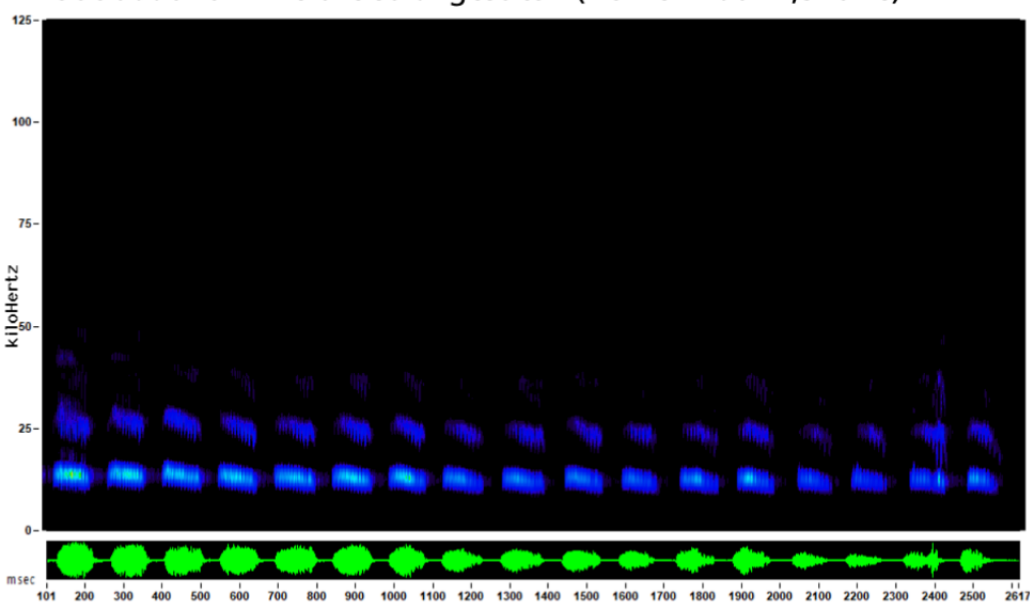
Field vole: calls between about 30 and 40kHz (frame width 80ms).



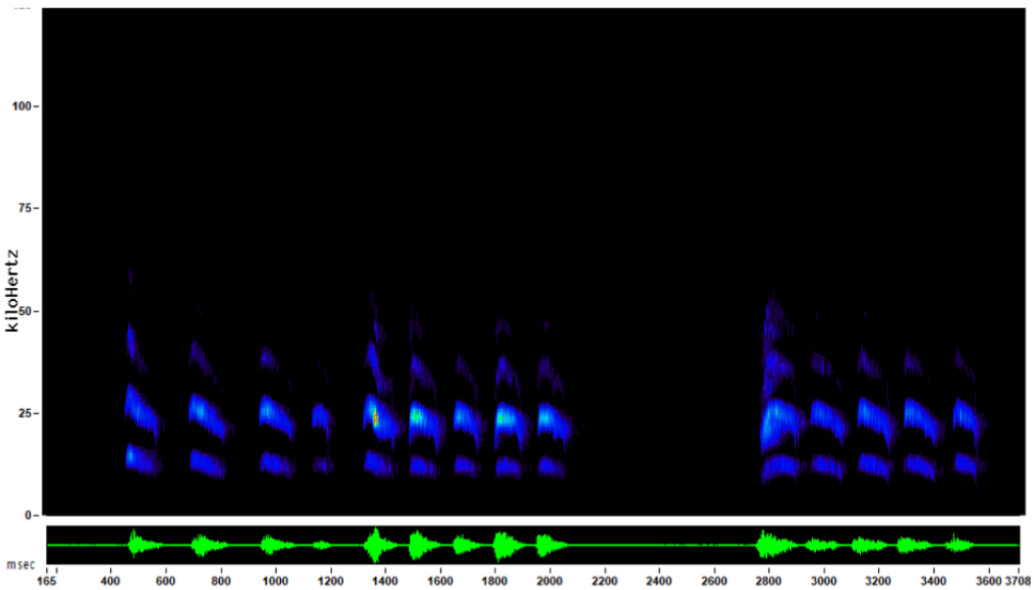
Common Shrew: typical recording with four visible harmonics (frame width 1,271ms).



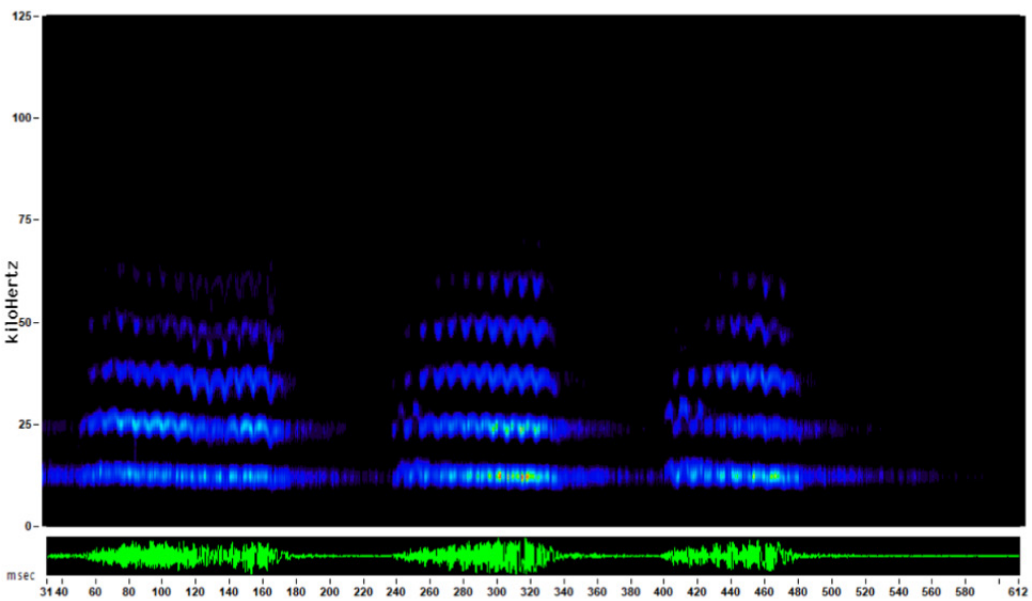
Common shrew: typical recording with calls that are very consistent across the sequence. In this recording the first harmonic at about 10kHz is the strongest call (frame width 2,516ms).



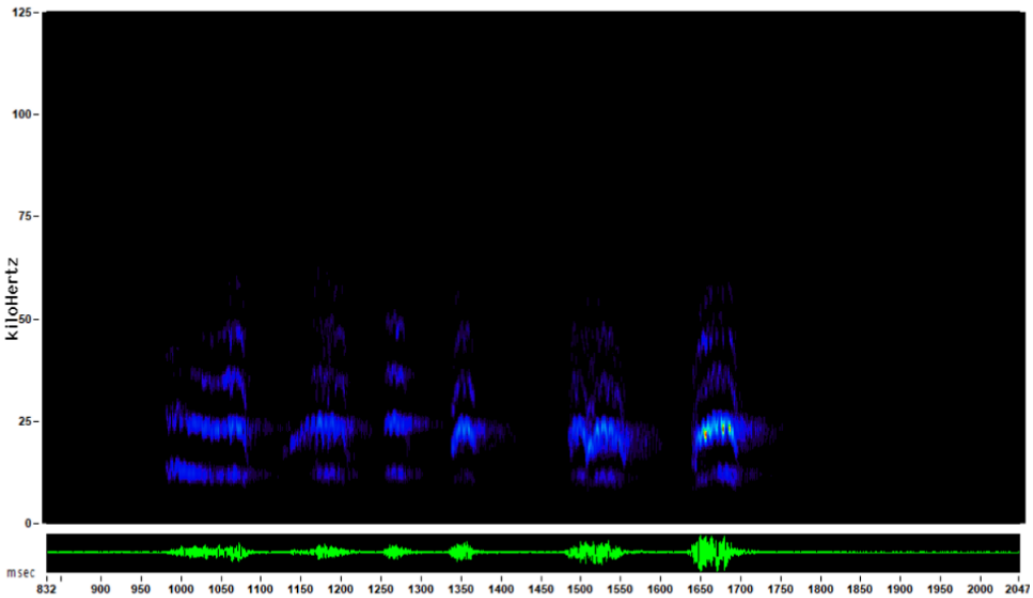
Common shrew: a less typical example with calls sloping downwards and a complex component at the start of the sequence (frame width 3,543ms).



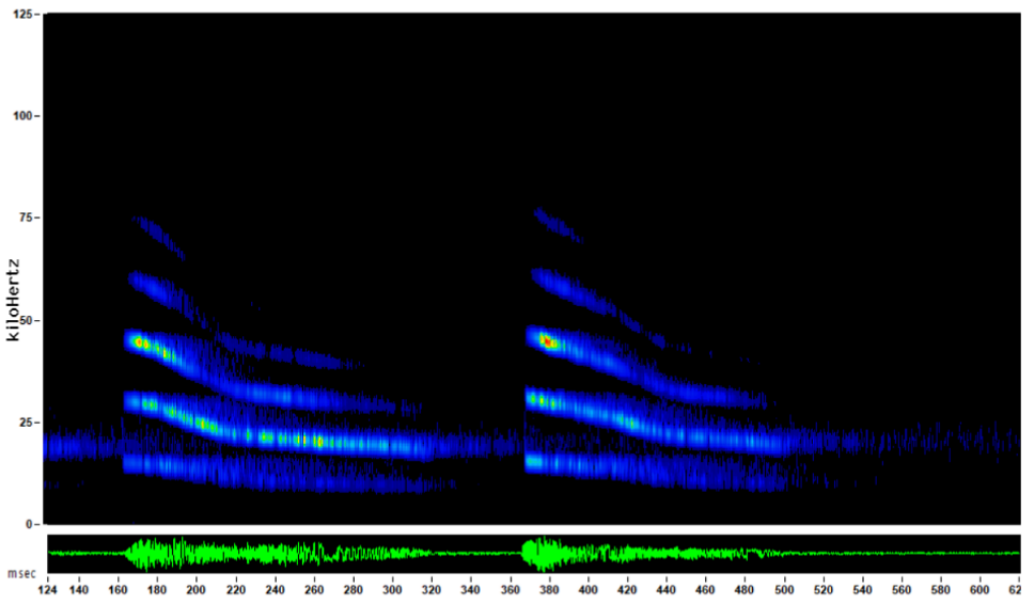
Common Shrew: typical calls showing five harmonics (frame width 581ms).



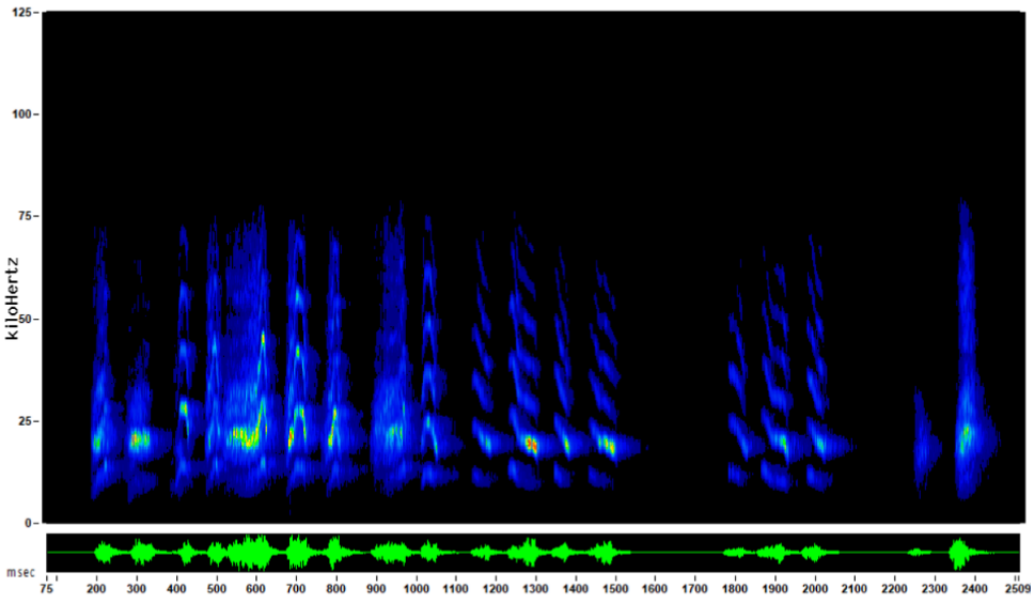
Common Shrew: a less typical example with variable calls in the sequence (frame width 1,215ms).



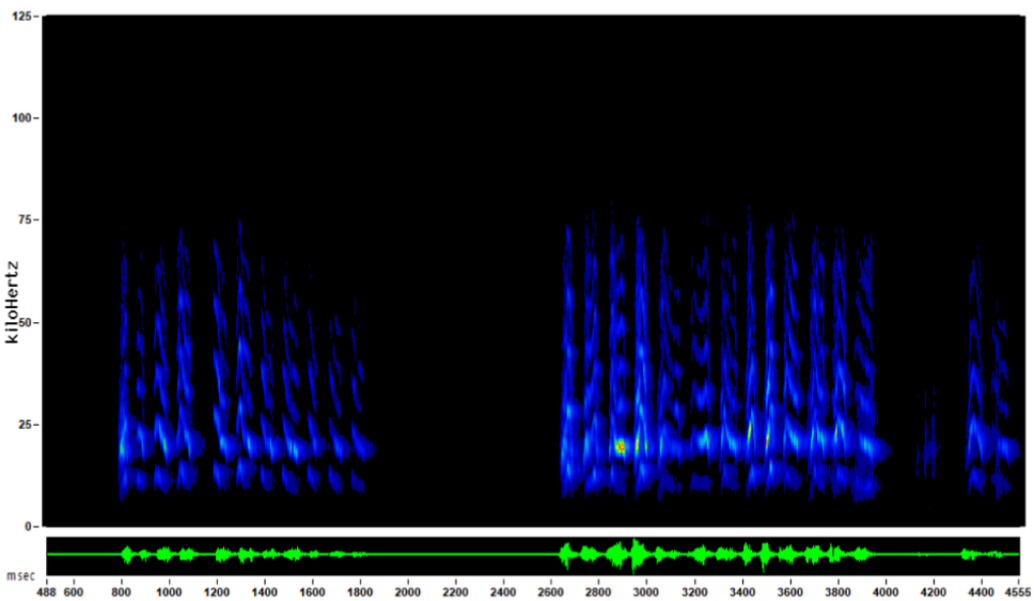
Pygmy Shrew: typical recording with sloping calls and multiple harmonics (frame width 696ms).



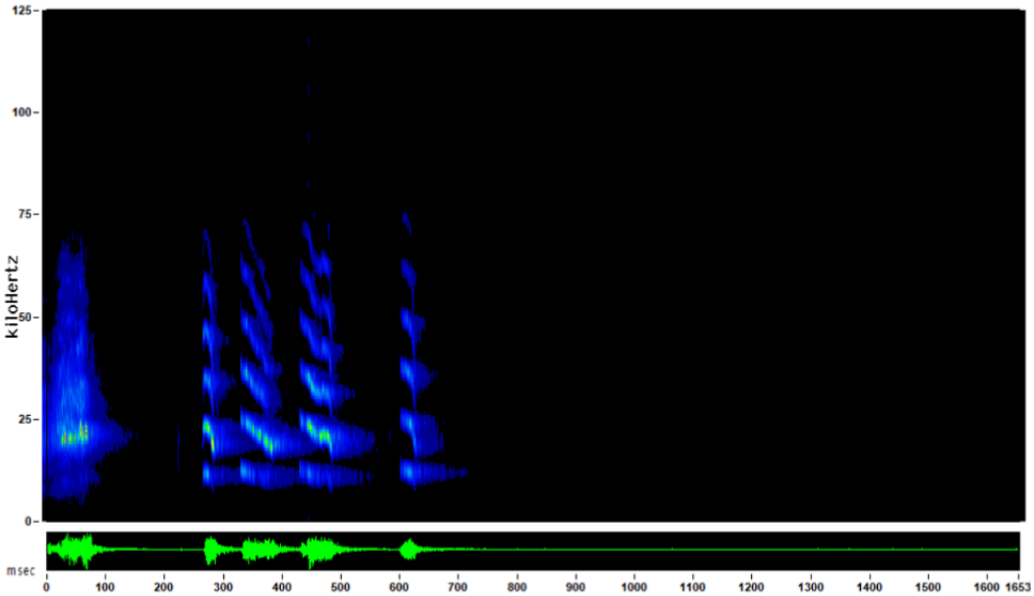
Pygmy Shrew: typical recording with sloping calls and multiple harmonics (frame width 2,434ms).



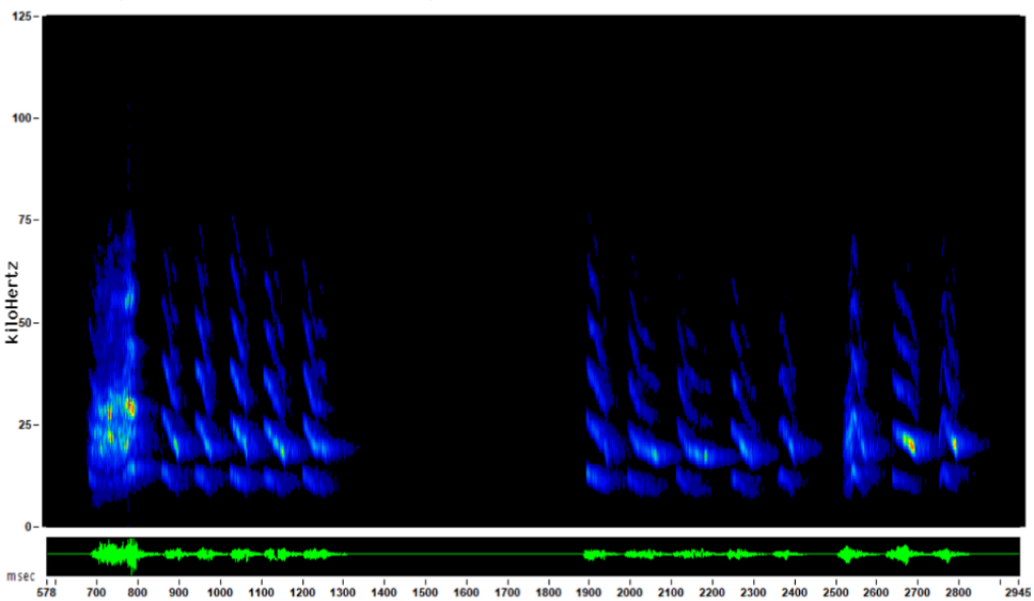
Pygmy Shrew: typical recording with sloping calls and multiple harmonics (frame width 4,067ms).



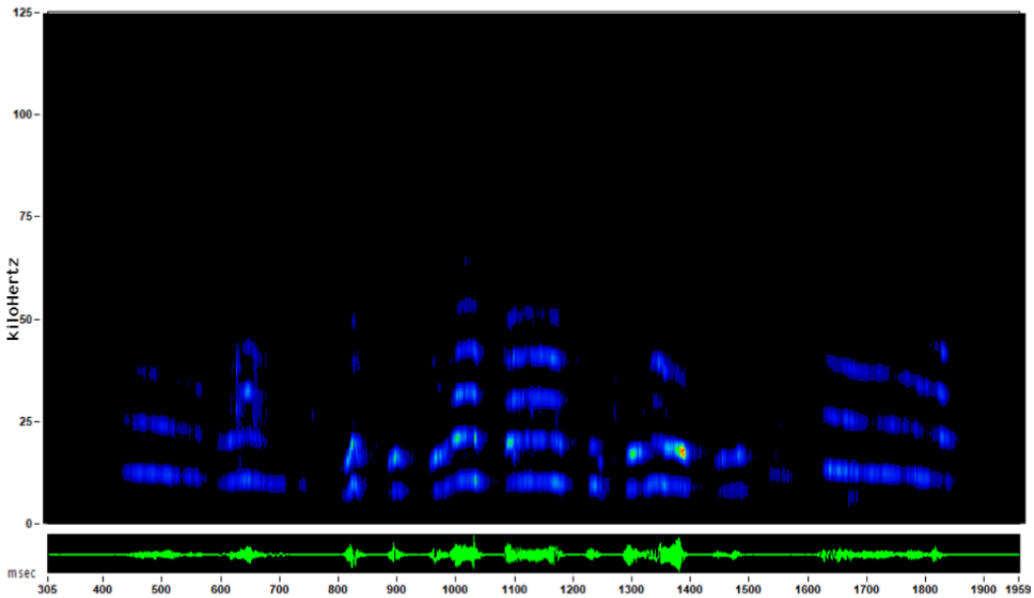
Pygmy Shrew: typical recording with sloping calls and multiple harmonics. At the start of the sequence is a complex call (frame width 1,653ms).



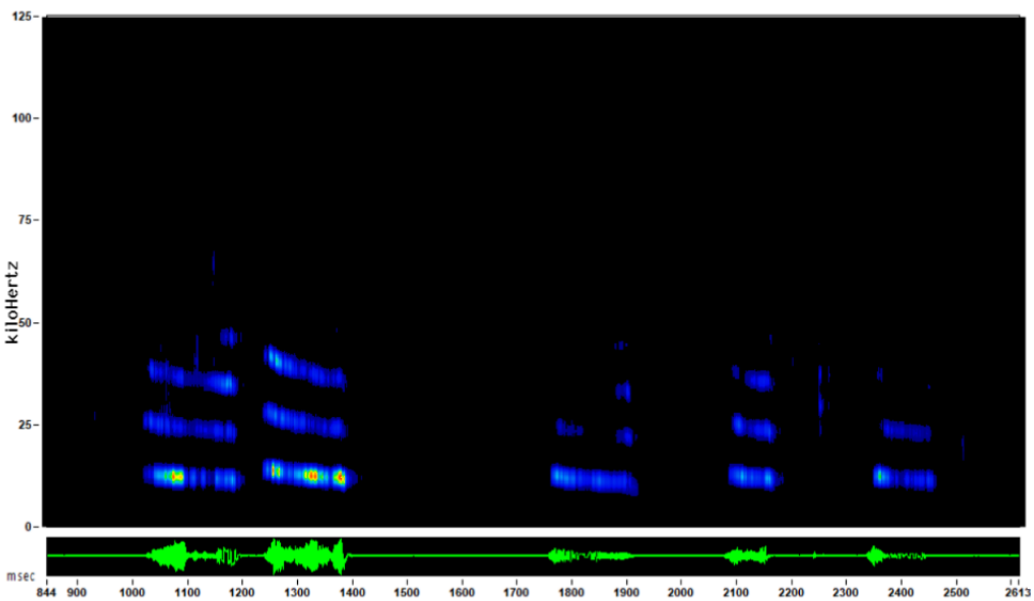
Pygmy Shrew: typical recording with sloping calls and multiple harmonics. At the start of the sequence is a complex call (frame width 2,367ms).



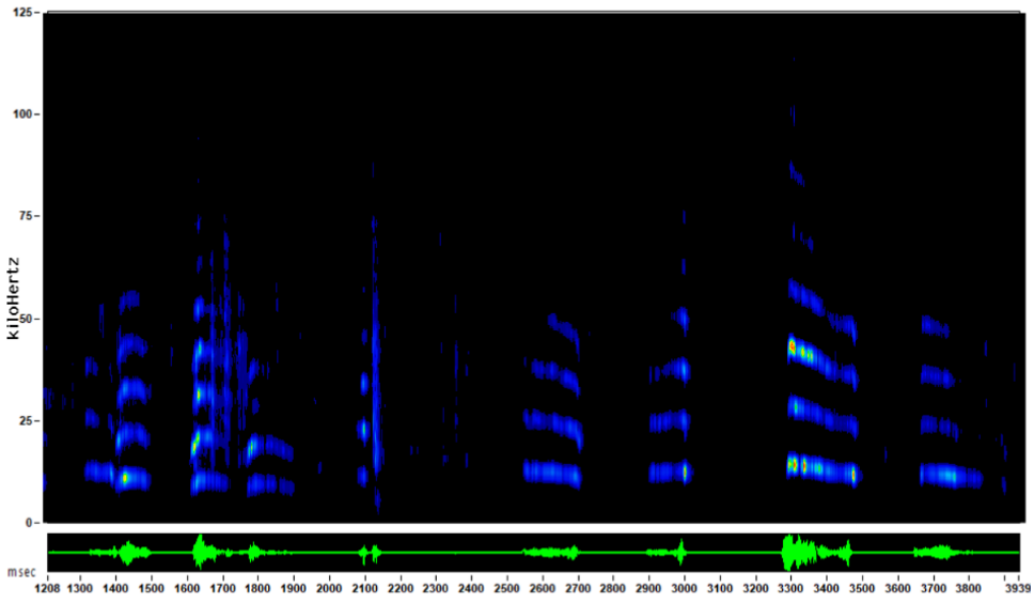
Water Shrew: typical recording with strongest harmonic ending about 10kHz (frame width 1,654ms).



Water Shrew: typical recording (frame width 1,769ms).



Water Shrew: typical recording (frame width 2,731ms).



Water Shrew: typical recording (frame width 1,927ms).