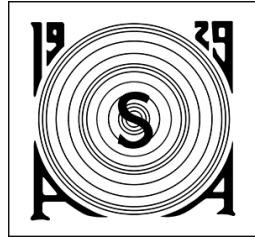


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Psychophysical audiogram of a California sea lion (*Zalophus californianus*) listening for airborne tonal sounds in an acoustic chamber

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Many species-typical audiograms for marine mammals are based on data from only one or a few individuals that are not always tested under ideal conditions. Here, we report auditory thresholds across the frequency range of hearing for a healthy, five-year-old female California sea lion identified as Ronan. Ronan was trained to enter a hemi-anechoic acoustic chamber to perform a go/no-go audiometric experiment. Auditory sensitivity was measured first by an adaptive staircase procedure and then by the method of constant stimuli. Minimum audible field measurements were obtained for 500 ms frequency modulated tonal upsweeps with 10% bandwidth and 5% rise and fall times. Thresholds were measured at 13 frequencies: in one-octave frequency steps from 0.1 to 25.6 kHz, and additionally at 18.0, 22.0, 36.2 and 40.0 kHz. Sensitivity was greatest between ~ 0.9 and 23 kHz, with best hearing of 0 dB re 20 μ Pa at 12.8 kHz. Hearing range, determined at the 60 dB re 20 μ Pa level, extended from ~ 0.2 kHz to 38 kHz. Sensitivity was comparable to that of three sea lions tested in similarly controlled conditions, and much better than that of two sea lions tested in less controlled conditions. [Work supported by ONR].