

## ACOUSTICS2008/3349 Evoked potential audiometry in sea lions

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Auditory sensitivity in the otariid pinnipeds (sea lions and fur seals) has traditionally been studied using a relatively small number of trained subjects and psychophysical techniques. Recent refinement of auditory evoked potential techniques with odontocete cetaceans has elevated interest in adapting these methods for sea lion subjects, with the goal of increasing sample size and efficiency in audiometric studies. To date, several basic electrophysiological characteristics of the California sea lion (*Zalophus californianus*) auditory system have been described, and these findings have allowed for the development of more advanced techniques in investigations of sea lion hearing. Most notable is the recording of the envelope following response (EFR) evoked by narrow-band, sinusoidally amplitude-modulated tones. This method can provide significant advantages in the detection of low-amplitude electrophysiological signals in noise using Fourier analysis and objective statistical detection of responses. Currently, EFR audiometry in the California sea lion and Steller sea lion (*Eumetopias jubatus*) is proving to be a promising method for rapidly assessing the variation of hearing capabilities among individuals, including the detection of hearing loss.