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Hearing and Acoustic Communication in the Lined Seahorse (*Hippocampus erectus*)

Seahorses produce a click; a stridulation of the posterior process of the supraoccipital against the coronet. We characterized the acoustic nature of 78 clicks recorded from 10 lined seahorses (*Hippocampus erectus*). In terms of pressure, peak frequency averaged 210 ± 23 Hz at an average peak amplitude of 95.9 ± 0.8 dB (re: 1 µPa) in the frequency domain. In terms of particle acceleration, peak frequency averaged 265 ± 22 (mean ± SE) Hz at an average peak amplitude of $1.52 \times 10^{-3} \pm 1.87 \times 10^{-4}$ m s^{-1}. Broadband hearing thresholds estimated from auditory evoked potentials (AEPs) of 11 H. erectus are 92.0 ± 1.5 dB (re: 1 µPa) and $1.73 \times 10^{-4} \pm 3.8 \times 10^{-5}$ m s^{-1} at 200 Hz; suggesting conspecific audition, particularly in terms of particle acceleration. Also, feeding and courtship behaviors of surgically muted seahorses were compared against controls. Muted seahorses did not suffer reduced proficiency when preying on live *Mysidopsis bahia*, discounting the click's role in prey capture. One-hour observations of male-female pairs over five days revealed an increase in clicking among males over time, concomitant with other documented courtship behaviors. Courtship of muted pairs was affected as characterized by cessation of pointing, a late courtship behavior, in females during the latter days of courtship, and no increase among males in the number of approaches to females over time. These results suggest that the click may be an acoustic signal in a behavioral repertoire displayed to synchronize reproductive states in preparation for copulation.