

1. Presenter – Asila Ghoul

2. Affiliation – Institute of Marine Sciences, Long Marine Laboratory, 100 Shaffer Road, University of California Santa Cruz, Santa Cruz, CA, 95060, USA. 831-459-3345. asila@ucsc.edu.

3. Title – Vocal communication in female southern sea otters and their dependent pups

Asila Ghoul and Colleen Reichmuth, *Institute of Marine Sciences, Long Marine Laboratory, University of California Santa Cruz, Santa Cruz, CA, USA.*

4. Abstract – Southern sea otters (*Enhydra lutris nereis*) produce a range of aerial vocalizations in different social contexts—the loudest of which is the “scream” call. These harsh calls are most commonly produced by females and pups during periods of high arousal and separation, and can be heard by human listeners up to a kilometer away. While the acoustic ecology of sea otters is not well described, behavioral observations suggest that scream vocalizations are important in maintaining contact between mother-pup pairs. Females leave their dependent young at the water’s surface during brief but frequent foraging dives, and must relocate their pups in a dynamic environment where other sensory cues are often limited or unavailable. A female vocalizes immediately after surfacing, which elicits a return call from the pup, resulting in an exchange of screams that continues until the pair is reunited. In the present study, female and pup screams were recorded at close range (1 – 2 m) in a captive setting from individuals of known ages. The calls had broadband harmonic components (0.8 – 20 kHz) of variable duration (0.4 – 2 s) and amplitude (50 – 113 dB<sub>rms</sub> re: 20μPa). Preliminary discriminant function analyses of call parameters related to energy distribution and formant structure indicate that pup screams have strong individual signatures. These initial data also show that the lower part of the frequency spectrum appears to be the most relevant to separating individuals on the basis of their calls. This research, combined with ongoing studies of sound reception in this species, will improve understanding of the acoustic ecology and conservation of sea otters.