

## **Adventures in bioacoustics: Sound reception, production, and perception in amphibious mammals**

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Keynote address: Dr. Colleen Reichmuth, Research Scientist, Long Marine Laboratory, University of California Santa Cruz

The songs of whales and sonar of dolphins readily come to mind when thinking of the unique acoustics of marine mammals, but equally curious are the ways in which sea otters, seals, sea lions, and walruses use sound above and below the water's surface. The amphibious lifestyles of these marine mammals present special challenges to their sensory structures and interesting opportunities for comparative study. This talk will present a personal perspective on the bioacoustics of marine carnivores gathered from an assortment of laboratory and field studies conducted over the last 20 years. The methods used for this research include psychoacoustics, cognitive testing, analysis of communicative signaling, playback experiments, and in vivo studies of sound production.

Dr. Reichmuth is an animal behaviorist with a PhD in Ocean Sciences. Her research program is based at Long Marine Laboratory at the University of California Santa Cruz, and it includes an eclectic group of students from psychology, organismal biology, oceanography, and environmental studies and an equally eclectic group of trained marine mammals that participate in a variety of cognitive, sensory, and behavioral research projects. She has worked closely with California sea lions, harbor seals, elephant seals, ringed seals, spotted seals, walruses and sea otters, often using operant training methods to explore their perceptual capabilities. A major focus of her current research is using psychoacoustic tools to determine the potential deleterious effects of noise on hearing in marine mammals.