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The production and reception of underwater sound in Hawaiian monk seals (*Neomonachus schauinslandi*)

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The endangered Hawaiian monk seal is a primitive phocid (true) seal endemic to the tropical Hawaiian Islands. At present, there is a lack of substantive bioacoustic information available for this species, with no formal descriptions of underwater vocalizations and limited data concerning underwater hearing. To address these knowledge gaps, we are working to better understand species-typical auditory capabilities and sound production by thoroughly evaluating a single individual living in human care. A mature male monk seal was trained to perform an auditory go/no-go signal detection task in water. Detection thresholds were measured for narrowband tones across the frequency range of hearing to generate a full underwater audiogram. Additionally, an acoustic recorder was placed in this monk seal's living enclosure for a full year, enabling characterization of his underwater repertoire and seasonal trends in vocal behavior. This study presents the first examination of underwater vocalizations in Hawaiian monk seals, provides insight into the perceptual abilities of this species and the evolution of underwater hearing within the phocid lineage, and enables improved assessments of noise effects on these vulnerable seals. [Supported by Navy's Living Marine Resources Program].