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A HAND-HELD TOOL FOR RAPID ASSESSMENT OF UNDERWATER SOUND TO INFORM DECISION MAKING

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Measurements of underwater noise from pile driving have been collected in San Diego Bay during a marine construction project, to inform placement of marine mammal observers, and adhere to Incidental Harassment Authorization (IHA) requirements. This presentation will focus on a subset of these measurements made with a hand-held device, or Underwater Sound Level Meter (USLM). The USLM employs an intuitive operating menu, requires no specialized training, and rapidly delivers fully calibrated results expressed in the relevant metric, such as peak level, rms level and sound exposure level. Several examples will be discussed involving the documentation of isopleths associated with the 190 dB and 180 dB isopleths (rms level, dB re 1 μ Pa) that define Level A injury thresholds for pinnipeds and cetaceans, respectively. One represents a unique set of measurements made during which the USLM documented the evolution of the underwater sound field from impact pile driving versus range every approximately 5 m. This made possible by recording from a small vessel that slowly opened in range from the pile source (the USLM also records its own position via GPS.) The results of such fine-scale range sampling are also compared with modeling of transmission loss with range from the pile. Stakeholders in both industry and government share the same goal of rapid, calibrated measurements of underwater noise to protect marine life and comply with statutory environmental regulations. The USLM is a time and labor saving device that meets this goal.

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