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## Assessment of Underwater Anthropogenic Noise Associated with Construction Activities in Bechers Bay, Santa Rosa Island, California

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### ABSTRACT

Acoustic monitoring and mitigation of underwater construction noise was conducted during marine pier demolition and reconstruction activities near Santa Rosa Island, California. Activities spanned two construction seasons and used both auger and pneumatic percussion drilling methods for pile placement. Pile drilling activities during construction resulted in sound pressure levels (SPL) ranging from 121.0 to 184.5 dB re 1  $\mu$ Pa. No significant difference was found for calculated source SPLs between the Season 1 and Season 2 methods of pile drilling (KW = 2.28, p = 0.15). Additionally, no significant difference was found for calculated source SPLs during active drilling between the Season 1 and Season 2 methods of pile drilling (KW = 3.39, p = 0.07). The average calculated source SPL documented during this study was lower than the NOAA Fisheries mandated safety zone threshold (160.0 dB re 1  $\mu$ Pa [rms]) for harassment to marine mammals. This is the first known report of SPL data collected in concert with marine pile drilling via the auger drilling technique. The results from this study can be used to improve information for and assist with the development of regulatory policies and techniques regarding sound level thresholds and mitigation monitoring.

### KEYWORDS

Acoustic Monitoring; Pile Drilling; Mitigation; Channel Islands

### Cite this paper

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