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Anthropogenic noise generated by mobile vehicles used to survey rockfishes in the Channel Islands, California

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ABSTRACT

Impacts of ambient noise in the ocean are a concern for fish populations, as well as for other marine vertebrates. The influence of noise associated with mobile equipment, such as autonomous vehicles and occupied submarines used to survey demersal rockfishes (genus *Sebastes*), has not previously been quantified. Such noise likely occurs within the same low frequency range as sound produced by soniferous rockfish species, whose calls have source levels ranging from 103–113 dB re 1 μ Pa. A digital acoustic monitoring (DMON) instrument was deployed in association with optical and ultrasonic surveillance cameras in October 2016 off the Channel Islands in Southern California, to quantify mobile vehicle noise and to monitor changes in rockfish behavior during these surveys. The DMON sampled over 5 days for a total of 45.5 h. Analysis of a bandpass filtered (100–500 Hz) data subset showed ambient noise levels of approximately 100 dB RMS re 1 μ Pa, with vehicle activities generating spikes in noise levels of 10–20 dB above baseline. These preliminary results indicate that the DMON captured a diversity of both abiotic and biotic sources of sound, and may indicate local masking of rockfish sounds by survey vehicle noise.