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Noise pollution is pervasive in U.S. protected areas

Rachel T. Buxton^{1*}, Megan F. McKenna², Daniel Mennitt³, Kurt Fristrup², Kevin Crooks¹, Lisa Angeloni⁴, George Witt...

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Infrasound monitoring is needed for investigating noise pollution

Yoshiyasu Takefuji, Professor,
Keio University

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The paper has investigated noise pollution in US protected areas (1). The monitored noise frequency is from 20 to 20000Hz. The recent study shows that infrasound (less than 20Hz) health effects should be considered (2,3). In other words, less than 20Hz noise monitoring is needed. Strong infrasound disturbs sleep and impairs health at distances (3). There are two types of acoustic signals: normal sound signals and strained sound signals. The normal sound signal decrease in loudness over distance follows the 6 dB per doubling of distance rule. The strained sound signal decrease in loudness over distance follows 3 dB per doubling of distance rule (4,5) or less than 3 dB due to the use of a resonator (6). During the nighttime, with a distinct inversion layer and a helicopter below it, there will be a case of cylindrical propagation with only a 3 dB loss at doubled distance from the source (4). The bladder grasshopper achieves hearing distances between 1.5 and 2 km at night (6). Cook has shown how unimportant molecular attenuation is to infrasonic propagation (5×10^{-8} dB per km) (7). Since infrasound below 1Hz is virtually unattenuated by atmospheric absorption, it is detectable at distances of thousands of kilometers from the source. Infrasound monitoring is needed for protecting human and animal health.

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