Effects of Anthropogenic Noise on Mating Behavior and Fitness

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Anthropogenic noise has dramatic behavioral effects on animals, particularly those that communicate acoustically. Previous studies have been unable to assess whether and how noise affects lifetime reproductive success because most noise work is done with long-lived vertebrates. To remedy this, our study used lab-friendly invertebrates. We tested the effects of noise on life history and reproductive investment of the Pacific Field cricket. We randomly assigned crickets to one of three chronic noise conditions early in life: masking traffic noise, nonmasking traffic noise (traffic noise from which we digitally removed frequencies that overlap with the cricket song), or silence. We measured development time, adult size, lifespan, and female reproductive investment (lifetime eggs laid and their hatching success). Crickets reared in masking noise took longer to develop than those reared in silence, and lived shorter adult lives. Noise did not affect female reproductive investment. I am currently collecting data on male reproductive investment. These findings contribute to our overall understanding of anthropogenic noise and ability to make informed decisions concerning land management.

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