A Study of the Behavior of Mus musculus in the Presence of Ultrasonic Frequencies to Test the Possible Viability of Ultrasonic Frequencies as a way to Reduce Wildlife Hazards on Roadways

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Have you ever been on a highway late in the evening where nocturnal creatures begin to come out? Or even early mornings when the temperature is still cool enough for big animals to scavenge? Have you ever been hit by one? In Texas, it is very common especially in major highways to experience such tragic events. The purpose of this investigation was to determine which frequency if any was a true deterrent to mus musculus. A secondary outcome was, the frequency used as a deterrent based on the mus musculus gender. This project used non-invasive test methods by creating an artificial roadway where an ultrasonic speaker was placed at the end of the roadway. The mus musculus was placed three feet from the speaker, a waiting period of one minute passed then the frequency from the speaker would be emitted for twenty seconds. Data was collected based on the movement of the mus musculus toward or away from the speaker. This process was repeated for all thirty-two mus musculus at the different frequencies. Data was then analyzed, and used in several statistical analysis tests, a Two-Way ANOVA with repetition, Levene's Test, Shapiro Wilk Test, and a Tukey Test. The experimentation showed positive results in this investigation where mus musculus reacted to the sound frequencies that were being emitted. In conclusion, this investigation has provided sufficient information to build upon in further studies of possible environmental impact of animal behavior.

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