

Noise pollution:

Noise pollution, also known as **environmental noise** or **sound pollution**, is the propagation of noise with ranging impacts on the activity of human or animal life, most of them harmful to a degree. The source of outdoor noise worldwide is mainly caused by machines, transport, and propagation systems. Poor **urban planning** may give rise to noise disintegration or pollution, side-by-side industrial and residential buildings can result in noise pollution in the residential areas. Some of the main sources of noise in residential areas include **loud music**, **transportation** (traffic, rail, airplanes, etc.), lawn care maintenance, **construction**, electrical generators, explosions, and people. Documented problems associated with urban environment noise go back as far as **ancient Rome**. Noise is measured in Decibel (dB). Noise pollution associated with household electricity generators is an emerging environmental degradation in many developing nations. The average noise level of 97.60 dB obtained exceeded the **WHO** value of 50 dB allowed for residential areas. Research suggests that noise pollution is the highest in low-income and racial minority neighborhoods.

High noise levels can contribute to **cardiovascular** effects in humans and an increased incidence of **coronary artery disease**. In animals, noise can increase the risk of death by altering predator or prey detection and avoidance, interfere with reproduction and navigation, and contribute to permanent hearing loss. A substantial amount of the noise that humans produce occurs in the ocean. Up until recently, most research on noise impacts has been focused on marine mammals, and to a lesser degree, fish. In the past few years, scientists have shifted to conducting studies on invertebrates and their responses to anthropogenic sounds in the marine environment. This research is essential, especially considering that invertebrates make up 75% of marine species, and thus compose a large percentage of ocean food webs. Of the studies that have been conducted, a sizable variety in families of invertebrates have been represented in the research. A variation in the complexity of their sensory systems exists, which allows scientists to study a range of characteristics and develop a better understanding of anthropogenic noise impacts on living organisms.

While the elderly may have cardiac problems due to noise, according to the World Health Organization, children are especially vulnerable to noise, and the effects that noise has on children may be permanent. Noise poses a serious threat to a child's physical and psychological health, and may negatively interfere with a child's learning and behavior.

Noise pollution affects both health and behavior. Unwanted sound (noise) can damage physiological health. Noise pollution is associated with several health conditions, including cardiovascular disorders, **hypertension**, high stress levels, **tinnitus**, hearing loss, sleep disturbances, and other harmful and disturbing effects.¹

Noise can have a detrimental effect on animals, increasing the risk of death by changing the delicate balance in predator or prey detection and avoidance, and interfering the use of the sounds in communication, especially in relation to reproduction and in navigation.

Many of the studies that were conducted on invertebrate exposure to noise found that a physiological or behavioral response was triggered. Most of the time, this related to stress, and provided concrete evidence that marine invertebrates detect and respond to noise. Some of the most informative studies in this category focus on hermit crabs. In one study, it was found that the behavior of the hermit crab *Pagurus bernhardus*, when attempting to choose a shell, was modified when subjected to noise.¹