

Noise Pollution

Most urban dwellers are subject to noise pollution: any unwanted, disturbing, or harmful sound that impairs or interferes with hearing, causes stress, hampers concentration and work efficiency, or causes accidents. Noise levels are measured in decibel-A (dbA), sound pressure units that vary with human activities. Sound pressure becomes damaging at about 85 dbA and painful at around 120 dbA. At 189 dbA, it can kill.

Prolonged exposure to sound levels above 85 dbA can cause permanent hearing damage. About one of every eight children and teens in the United States have some permanent hearing loss, mostly from listening to music played at loud levels. A 2005 study of use of compact-disc players (like you guys even know what these are) and iPods with earphones found that the volume ranged from 98 to 129 decibels, well beyond the level for hearing loss. If someone else can hear music from your earpiece, you are damaging your hearing.

Because the db and dbA scales are logarithmic, sound pressure is multiplied 10-fold with each 10-decibel rise. Therefore, a rise from 30 dbA (quiet rural area) to 60 dbA (normal restaurant conversation) represents a 1,000-fold increase in sound pressure on the ear. Noise pollution can be reduced by modifying noisy activities and devices, shielding noisy devices or processes, shielding workers or other persons from the noise, moving noisy operations or machinery away from people, and using antinoise (noise cancelling technology).

Noise Levels (in dbA)

Normal breathing: 9

Whisper: 19

Quiet rural area: 29

Quiet room: 39

Rainfall: 49

Normal conversation: 59

Vacuum cleaner: 69

Average factory: 79

Permanent damage (after an 8-hour exposure): 85

Lawn mower: 89

Chainsaw 99

Rock music: 109

Thunderclap (nearby): 119

Earphones at loud level: 129

Fire alarm: 139

Military rifle: 159

Miller, G.Tyler, *Living in the Environment*, 15th ed., p. 555