

Noise Pollution

Sound is essential to our daily lives, but noise is not. Noise is generally used as an unwanted sound, or sound which produces unpleasant effects and discomfort on the ears. Sound becomes unwanted when it either interferes with normal activities such as sleeping, conversation, or disrupts or diminishes one's quality of life. Not all noise can be called noise pollution. If it does not happen regularly, it may be termed as 'Nuisance'. Scientists also believe that its not only humans who are affected. For example, water animals are subjected to noise by submarines and big ships on the ocean, and chain-saw operations by timber companies also create extreme noise to animals in the forests.

Generally, noise is produced by household gadgets, big trucks, vehicles and motorbikes on the road, jet planes and helicopters hovering over cities, loud speakers etc. Noise (or sound) is measured in the units of decibels and is denoted by the dB. Noise which is more than 115 dB is intolerant. The industrial limit of sound in the industries must be 75 dB according to the World Health Organization.

Noise is considered as environmental pollution, even though it is thought to have less damage on humans than water, air or land pollution. But people who are affected by severe noise pollution know that it is a massive issue that needs attention.

Most of us are very used to the sounds we hear in everyday life. Loud music, the television, people talking on their phone, the traffic and even pets barking in the middle of the night. All of these have become a part of the urban culture and rarely disturb us. However, when the sound of the television keeps you from sleeping all night or the traffic starts to give you a headache, it stops becoming just noise and start turning into noise pollution. For many of us, the concept of pollutions limited to nature and resources. However, noise that tends to disrupt the natural rhythm of life makes for one solid pollutant.

By definition, noise pollution takes place when there is either excessive amount of noise or an unpleasant sound that causes temporary disruption in the natural balance. This definition is usually applicable to sounds or noises that are unnatural in either their volume or their production. Our environment is such that it has become difficult to escape noise. Even electrical appliances at home have a constant hum or beeping sound. By and large, lack of urban planning increases the exposure to unwanted sounds. This is why understanding noise pollution is necessary to curb it in time.



Causes of Noise Pollution

1. **Industrialization:** Most of the industries use big machines which are capable of producing large amount of noise. Apart from that, various equipments like compressors, generators, exhaust fans, grinding mills also participate in producing big noise. Therefore, you must have seen workers in these factories and industries wearing ear plugs to minimize the effect of noise.

2. **Poor Urban Planning:** In most of the developing countries, poor urban planning also play a vital role. Congested houses, large families sharing small space, fight over parking, frequent fights over basic amenities leads to noise pollution which may disrupt the environment of society.
3. **Social Events:** Noise is at its peak in most of the social events. Whether it is marriage, parties, pub, disc or place of worship, people normally flout rules set by the local administration and create nuisance in the area. People play songs on full volume and dance till midnight which makes the condition of people living nearby pretty worse. In markets, you can see people selling clothes via making loud noise to attract the attention of people.
4. **Transportation:** Large number of vehicles on roads, aeroplanes flying over houses, underground trains produce heavy noise and people get it difficult to get accustomed to that. The high noise leads to a situation wherein a normal person lose the ability to hear properly.
5. **Construction Activities:** Under construction activities like mining, construction of bridges, dams, buildings, stations, roads, flyovers take place in almost every part of the world. These construction activities take place everyday as we need more buildings, bridges to accommodate more people and to reduce traffic congestion. The down point is that these construction equipments are too noisy.
6. **Household Chores:** We people are surrounded by gadgets and use them extensively in our daily life. Gadgets like TV, mobile , mixer grinder, pressure cooker, vacuum cleaners , washing machine and dryer, cooler, air conditioners are minor contributors to the amount of noise that is produced but it affects the quality of life of your neighborhood in a bad way.

While this form of pollution may seem harmless, it in fact has far reaching consequences. The adverse effects on the health of the environment are quite severe. Not only is the local wildlife affected by the pollution, humans also face a number of problems due to it.

Effects of Noise Pollution

1. Hearing Problems: Any unwanted sound that our ears have not been built to filter can cause problems within the body. Our ears can take in a certain range of sounds without getting damaged. Man made noises such as jackhammers, horns, machinery, airplanes and even vehicles can be too loud for our hearing range. Constant exposure to loud levels of noise can easily result in the damage of our ear drums and loss of hearing. It also reduces our sensitivity to sounds that our ears pick up unconsciously to regulate our body's rhythm.

2. Health Issues: Excessive noise pollution in working areas such as offices, construction sites, bars and even in our homes can influence psychological health. Studies show that the occurrence of aggressive behavior, disturbance of sleep, constant stress, fatigue and hypertension can be linked to excessive noise levels. These in turn can cause more severe and chronic health issues later in life.

3. Sleeping Disorders: Loud noise can certainly hamper your sleeping pattern and may lead to irritation and uncomfortable situations. Without a good night sleep, it may lead to problems related to fatigue and your performance may go down in office as well as at home. It is therefore recommended to take a sound sleep to give your body proper rest.

4. Cardiovascular Issues: Blood pressure levels, cardio-vascular disease and stress related heart problems are on the rise. Studies suggest that high intensity noise causes high blood pressure and increases heart beat rate as it disrupts the normal blood flow. Bringing them to a manageable level depends on our understanding noise pollution and how we tackle it.

5. Trouble Communicating: High decibel noise can put trouble and may not allow two people to communicate freely. This may lead to misunderstanding and you may get difficult understanding the other person. Constant sharp noise can give you severe headache and disturb your emotional balance.

6. Effect on Wildlife: Wildlife faces far more problems than humans because noise pollution since they are more dependent on sound. Animals develop a better sense of hearing than us since their survival depends on it. The ill effects of excessive noise begin at home. Pets react more aggressively in households where there is constant noise.

7. Physical Effects:

The physical manifestation of noise pollution is the effect on hearing ability. Repeated exposure to noise may result in temporary or permanent shifting of the hearing threshold of a person depending upon the level and duration of exposure. The immediate and acute effect of noise pollution is impairment of hearing (i.e. total deafness.)

Human ears have sensory cells for hearing. If these cells are subjected to repeated sounds of high intensity before they have an opportunity to recover fully, they can become permanently damaged leading to impairment of hearing. Besides the sensory cells, the delicate tympanic membrane or the ear drum can also be permanently damaged by a sudden loud noise such as an explosion.

8. Physiological Effects:

The physiological manifestations of noise pollution are several as mentioned below:

- (a) Headache by dilating blood vessels of the brain.
- (b) Increase in the rate of heart-beat.
- (c) Narrowing of arteries.
- (d) Fluctuations in the arterial blood pressure by increasing the level of cholesterol in the blood.
- (e) Decrease in heart output.
- (f) Pain in the heart.
- (g) Digestive spasms through anxiety and dilation of the pupil of the eye, thereby causing eye-strain.
- (h) Impairment of night vision.
- (i) Decrease in the rate of colour perception.
- (j) Lowering of concentration and affect on memory,
- (k) Muscular strain and nervous breakdown.
- (l) Psychological Effect

The psychological manifestations of noise pollution are:

- (a) Depression and fatigue which considerably reduces the efficiency of a person.
- (b) Insomnia as a result of lack of undisturbed and refreshing sleep
- (c) Straining of senses and annoyance as a result of slow but persistent noise from motorcycles, alarm clocks, call bells, telephone rings etc.
- (d) Affecting of psychomotor performance of a person by a sudden loud sound
- (e) Emotional disturbance

For a talkative person, the most important effect of noise pollution would invariably be that noise interferes with our conversation. So, noise is annoying and the annoyance depends on many factors not merely the intensity of the sound but also repetition, because even a sound of small intensity (e.g. dripping tap or clicking of clock) may become annoying, simply by repetition.

Some of the well- known effects of noise on human beings and the relation of noise pollution level and its harmful effects are shown in Table 5.8 and 5.9 respectively.

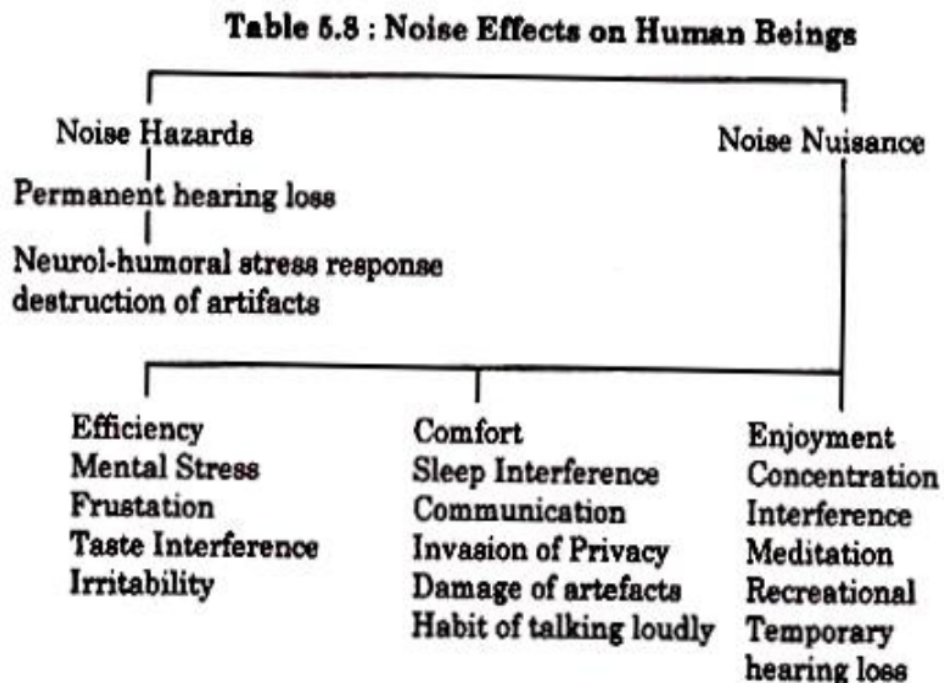


Table 5.9. Noise Pollution Level and its Harmful Effects:

Level (in db)	Effects
Upto23	No disturbance
30—60	Stress, tension, psychological (illness, heart attract) effects especially at upper range.
60—90	Damage to health, psychological and vegetative (disturbance in stomach-gall function, pains in muscles, high blood pressure, disturbance in sleeping)
60—120	Damages to health and ontological (ear diseases) effects
Above 120	Painful effects in long run.

Sources of Noise Pollution:

Major causes / sources of noise pollution are:

(i) Industrial Sources:

Progress in technology (industrialization) has resulted in creating noise pollution. Textile mills, printing presses, engineering establishments and metal works etc. contribute heavily towards noise pollution. In industrial cities like Kolkata, Ludhiana, Kanpur etc., often the industrial zones are not separated from the residential zones of the city especially in the case of small scale industries.

These operate from workshops located on the ground floors of the residential areas and cause annoyance, discomfort and irritation to the residents exposed to the noise that is inevitably produced. The situation is much better in modern planned cities like Chandigarh where the industrial area is kept away from the residential areas and both are separated from each other by a sufficiently wide green belt.

(ii) Transport Vehicles:

Automobile revolution in urban centers has proved to be a big source of noise pollution. Increasing traffic has given rise to traffic jams in congested areas where the repeated hooting of horns by impatient drivers pierce the ears of all road users.

Noise from airplanes constitutes an increasing serious problem in big cities like Delhi & Mumbai. Airport situated in the vicinity of population centres and the air planes pass over residential areas. Heavy trucks, buses trains, jet-planes, motor-cycles, scooters, mopeds, jeeps—the list of vehicles is endless but the outcome is same — noise pollution.

(iii) Household:

The household is an industry in itself and is a source of many indoor noises such as the banging of doors, noise of playing children, crying of infants, moving of furniture, loud conversation of the inhabitants etc. Besides these are the entertainment equipment in the house, namely the radio, record-players and television sets. Domestic gadgets like the mixer-grinders, pressure cookers, desert coolers, air- conditioners, exhaust fans, vacuum cleaners, sewing and washing machines are all indoor sources of noise pollution.

(iv) Public Address System:

In India people need only the slightest of an excuse for using loud speakers. The reason may be a religious function, birth, death, marriage, elections, demonstration, or just commercial advertising. Public system, therefore, contributes in its own way towards noise pollution.

(v) Agricultural Machines:

Tractors, thrashers, harvesters, tube wells, powered tillers etc. have all made agriculture highly mechanical but at the same time highly noisy. Noise level 90 dB to 98 dB due to running of farm machines have been recorded in the state of Punjab.

(vi) Defence Equipment:

A lot of noise pollution is added to the atmosphere by artillery, tanks, launching of rockets, explosions, exercising of military airplanes and shooting practices. Screams of jet engines and

sonic booms have a deafening impact on the ears and in extreme cases have been known to shatter the window panes and old dilapidated buildings.

(vii) Miscellaneous Sources:

The automobile repair shops, construction-works, blasting, bulldozing, stone crushing etc. are other sources of noise pollution.

Nuisance

Nuisance is usually used to describe an activity or condition that is harmful or annoying to others (e.g., indecent conduct, a rubbish heap or lot of birds making their nests in someones roof to the extent that they cause problems)

A few good examples of nuisance include:

- Barking dogs
- Building and construction site noise (please note however that noisy work is permitted between 8am and 6pm Monday to Friday, and 8am to 1pm on Saturdays)
- DIY noise during anti-social hours
- Burglar / car alarms
- Noisy deliveries at unreasonable hours
- Parties, Nightclubs and pubs
- Loud music / television / computer games
- Industrial processes (dry cleaners, factories etc)
- Kitchen extract / air conditioning units
- Places of worship
- Open-air event and street performers.

A public nuisance is an unreasonable interference with the public's right to property. It includes conduct that interferes with public health, safety, peace or convenience. This is a term that is mostly used in law and court rooms.

Statutory Nuisance can also be used for instances including the adverse effects of artificial light, dust, odour and insects.

Generally, all the above can mean different things to different people. For example, if your neighbor is a lover of cats, and you are not, it will not be long before you have problems if the cats keep coming to your balcony. Another cat lover may find this exciting and will be very happy with that.

So you see, usually, the term 'Nuisance' is used in relation to the average or generally acceptable conditions of a place or group of people.