

# ENVIRONMENTAL POLLUTION: Introduction, Causes & Types

## NOISE POLLUTION

- When unpleasant noise is created by machines or people which is annoying, distracting and physically painful then it is called noise pollution.
- Sound is measured in **decibels (dB)**, a person's hearing can be damaged if exposed to noise levels over 75 dB over a period of time.
- WHO recommends 30 dB sound levels for indoor.

**Note:** Noise pollution (control and regulation) Rules, 2000 define ambient noise levels for various areas.

The government of India launched a Real-time ambient noise monitoring system in March 2011, in which five remote noises monitoring each have been installed in different metros and 35 monitoring station will be in different cities.

### Sources

#### Indoor sources

- It includes noise produced by radio, television, generators, electric fans, air coolers etc.
- Due to the higher population, industries and transportation, effects of noise pollution is more in cities.

#### Outdoor sources

- It includes loudspeakers, industrial activities, automobiles, rail traffic, aero-planes and activities in social religious places etc.

### Effects

- Noise pollution is annoying and irritating. Noise causes many problems like disturbs sleep, causes hypertension (high blood pressure), emotional complications such as aggression, mental depression and annoyance.
- Noise pollution adversely affects the efficiency of individuals.
- Noise pollution can cause damage to the material of building due to exposure to ultrasonic/infrasonic waves.

### Control measures

- Making noise mounds, walls for noise attenuation and well-maintained roads and smooth surfacing of it are some of the noise abatement measures.

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- Air traffic noise can be tackled by the appropriate introduction of noise regulations for takeoff and landing of aircraft at the airport.
- Use of soundproofing equipment like generators in areas producing a lot of noise can reduce industrial noise.
- Reducing noise level from domestic sectors, maintenance of automobiles, and prohibition of uses of loudspeakers for certain time.
- A green belt of trees is a good noise absorber.

## RADIOACTIVE POLLUTION

**Note:** Radioactivity is a phenomenon of emission of alpha, beta and gamma rays due to the disintegration of atomic nuclei of some elements.

- Radioactive pollution is the pollution caused on account of the release of radioactive substances or radiations in the environment. There are many ways of radiation pollution like nuclear wastes from nuclear power plants, mining and processing of nuclear material etc.
- Radiations are mainly of two types:
- **Non-ionizing radiations:** The electromagnetic waves at the longer wavelength of the spectrum ranging from near infra-red rays to radio waves constitute non-ionizing radiations.
- It affects only those components which can absorb them.
- **Ionizing radiations:** when ionizing radiations pass from a medium, they ionize the atoms and molecules of the medium.
- They have high penetration power and can cause breakage of even macromolecules.

### Sources:

- Natural sources: cosmic rays from space and terrestrial radiation in earth's crust etc.
- Man-made sources: nuclear power plant, disposal of nuclear waste, nuclear transportation, uranium mining and nuclear weapons etc.

### Effects:

- The effects depend upon energy releasing capacity, half-life, rate of diffusion of pollutants and various environmental activities like wind, rainfall and temperature.
- Non-ionizing radiation can damage eyes due to coastal sand, snow etc.
- They destruct the cells and blood capillaries and can cause sunburns.
- Ionizing radiations cause sunburns, dead tissues, death of organisms, mutation increase in the occurrence of cancer and tumours etc.

### Control measures:

- Prevention is the best method for this pollution because no specific cure is available. All safety measure should be strictly enforced, and leakage of the radioactive element should be checked.

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- Regular monitoring and safe disposal of nuclear waste and safety measure against nuclear accidents.
- Banning of nuclear weapons and nuclear explosions.

### E-WASTE

- Discarded electronic products like computers, equipments used in information technology, home appliances, audio and video product etc are known as electronic waste.
- E-waste is not problematic if it is safe storage or recycled from time to time but it can be hazardous if recycled by primitive methods.
- Most of the e-waste in India is recycled by unorganized sector.
- Proper education, awareness, cost-effective technology and a need for a holistic approach are necessary.

### Conclusion:

- Depletion of the natural resources occur due to developmental activities and produce a large number of wastes that leads to pollution of all the resources of the environment and cause global warming and acid rains.
- River pollution and environmental degradation due to untreated or improper methods of treating waste is the root cause of ill health and loss of crop productivity.
- Pollution in effect is an undesirable by-product of industrialization and urbanization.
- Prevention and control measures are necessary for pollution otherwise it will become hazardous to human and other organisms.