

ENVIRONMENTAL POLLUTION AND CONTROL

NOISE POLLUTION CONTINUED

Effects of Noise Pollution on Animals

- Noise pollution damage the nervous system of animal.
- Animal loses the control of its mind and becomes dangerous

Impacts of Noise:

a. Annoyance:

It creates annoyance to the receptors due to sound level fluctuations. The aperiodic sound due to its irregular occurrences causes displeasure to hearing and causes annoyance.

b. Physiological Effects:

The physiological features like breathing amplitude, blood pressure, heart-beat rate, pulse rate, blood cholesterol are affected.

c. Loss of Hearing:

Long exposure to high sound levels cause loss of hearing. This is mostly unnoticed, but has an adverse impact on hearing function.

d. Human Performance:

The working performance of workers/human will be affected as they'll be losing their concentration.

e. Nervous System:

It causes pain, ringing in the ears, feeling of tiredness, thereby effecting the functioning of human system.

f. Sleeplessness:

It affects the sleeping there by inducing the people to become restless and loose concentration and presence of mind during their activities

g. Damage to Material:

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The buildings and materials may get damaged by exposure to infrasonic / ultrasonic waves and even get collapsed.

Control of Noise Pollution:

a. Reducing the Noise Levels from Domestic Sectors:

The domestic noise coming from radio, tape recorders, television sets, mixers, washing machines, cooking operations can be minimized by their selective and judicious operation. By usage of carpets or any absorbing material, the noise generated from felling of items in house can be minimized.

b. Maintenance of Automobiles:

Regular servicing and tuning of vehicles will reduce the noise levels. Fixing of silencers to automobiles, two wheelers etc., will reduce the noise levels.

c. Control over Vibrations:

The vibrations of materials may be controlled using proper foundations, rubber padding etc. to reduce the noise levels caused by vibrations.

d. Low Voice Speaking:

Speaking at low voices enough for communication reduces the excess noise levels.

e. Maintenance of machines:

Proper lubrication and maintenance of machines, vehicles etc. will reduce noise levels. For example, it is a common experience that, many parts of a vehicle will become loose while on a rugged path of journey. If these loose parts are not properly fitted, they will generate noise and cause annoyance to the driver/passenger. Similarly is the case of machines. Proper handling and regular maintenance is essential not only for noise control but also to improve the life of machine.

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RADIOACTIVE POLLUTION(RAP)

The radioactive pollution is defined as the physical pollution of air, water and the other radioactive materials. The ability of certain materials to emit the proton, gamma rays and electrons by their nuclei is known as the radioactivity. The protons are known as the alpha particle and the electrons are also known as the beta particle. Those materials are known as the radioactive elements. The environmental radiations can be from different sources and can be natural or manmade.

The natural radiations are also known as the background radiations. In this the cosmic rays are involved and reach the surface of earth from space. It includes the radioactive elements like radium, uranium, thorium, radon, potassium and carbon. These occur in the rock, soil and water. The man made radiations include the mining and refining of plutonium and thorium. This production and explosion of nuclear weapons include the nuclear fuels, power plants and radioactive isotopes.

The first atom bomb was exploded in the Japan in the year 1945. It affected the Hiroshima and Nagasaki cities. It adversely affected the flora, fauna and humans of that area. In spite of these destructions the nuclear race is still going on between different nations. The nuclear arms are tested with the production of nuclear weapons.

The radioactive elements are produced in the environment and affect other materials also. It includes the strontium, radium and iodine. The gases and particles are produced by the radioactive materials. They are carried by the wind and the rain brings down the radioactive particles to the ground which is referred as nuclear fallout. The soil transfers these radioactive substances to the plants and ultimately they reach the human body and cause many side effects. The iodine may affect the white blood cells, bone marrow, spleen, lymph, skin cancer, sterility, eye and damage to the lung. The strontium has the ability to aggregate in the bones and form a bone cancer and leads to tissue degeneration.

The radioactive materials are passed through the land to water and cause an adverse effect on the aquatic animals. They reach to human through the food chain. The nuclear power generates a lot of energy which is used to run turbines and produces electricity. The fuel and the coolant produce a large amount of pollution in the environment. The atomic reactors are also rich in the radioactive materials. Their biggest problem is in their disposal and if they are not properly disposed they can harm the living organisms. If they escape they can cause a hell lot of

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destruction. The gases escape as a vapor and cause pollution on the land and water. The use of radioactive isotopes is multipurpose. They are of a great scientific value and they may be present in the waste water. From these water resources they reach to the human body via food chain. The people who work in power plants have more chances of the exposure to harmful radiations. The human beings also receive the radiation and radiotherapy from the x rays.

Radiation is the process by which radiant energy is transferred from one place to another in the form of electro-magnetic waves.

The various types of radiation differ from one another by their frequency or wavelength. Higher the frequency or lower the wavelength of a radiation, higher will be its energy. Again, higher the energy of the radiation, it will cause higher damage to the living organisms.

Non-ionising Radiation:

These are the radiations which induce the ionisation of atoms and molecules. An atom is ionised when energy supplied to it separates one or more of its electrons. Ionisation of a molecule produces two fragments. The radiation pollution is mainly caused by non-ionising radiation.

Alpha (α), beta (β), and gamma (γ) radiations are mainly responsible for radiation pollution. Alpha radiation contains energetic α particles. Each alpha particle carries two units of positive charges and interacts strongly with living tissues.

Beta, radiation is made up of energetic electrons. Each beta particle carries one unit of negative charge and interacts strongly with matter. Gamma radiations are made up of high energy photons. Photons bring about strong electro-magnetic interaction with matter.