

Types of Pollution

Pollutants

The presence or introduction of any harmful or poisonous substances into the environment is known as pollution. Pollution refers to any unfavourable alteration of our surroundings.

Pollutants are the unwanted chemicals and other materials present in the environment which have harmful or poisonous effects on environmental surroundings. Pollutants also have harmful effects on plants, animals and human health.

Types of Pollutants

On the basis of degradation	Biodegradable and non-biodegradable pollutants	Characteristics Biodegradable pollutants: These pollutants get decomposed by biological or microbial actions. Examples: Sewage, paper Non-biodegradable pollutants: These cannot be degraded/decomposed or degrade at an extremely slow pace. Examples: Plastic, glass
On the basis of origin in the environment	Primary and secondary pollutants	Primary Pollutants: These pollutants are directly introduced in the environment such as sulphur dioxide and methane. Secondary Pollutants: These pollutants are formed when primary pollutants come into contact with the environment. Example: When hydrocarbons come into contact with sunlight, they form peroxyacetyl nitrate.
On the basis of existence in nature	Quantitative and qualitative pollutants	Quantitative Pollutants: These pollutants, although present in nature, may become harmful when their quantity increases. Examples: Carbon dioxide, nitrogen Qualitative Pollutants: These pollutants do not exist in the environment but are introduced into the surroundings as a result of human activities. Examples: Pesticides, chemical fertilisers

There are five major kinds of pollution—air pollution, water pollution, soil pollution, noise pollution and radioactive pollution.

Differences between biodegradable and non-biodegradable pollutants:

Biodegradable pollutants	Non-biodegradable pollutants
Biodegradable pollutants decompose into the soil.	Non-biodegradable pollutants never or take a fairly long time to decompose into the soil.
They do not pose a very serious challenge to the environment.	These pollutants pose a serious challenge to the environment because they do not decompose into the soil.
Examples: Paper, egg shells	Examples: Metal cans, plastic products

Kinds of Pollution

Air Pollution

Excessive concentration of foreign particles or substances into the air which adversely affects the atmosphere is known as air pollution.

Three types of air pollutants are

- Natural pollutants such as pollen grains and bacteria.
- Suspended particles in air (aerosols) such as fog, fumes, haze, dust and mist.
- Various gases such as carbon monoxide, sulphur dioxide and hydrogen sulphide are released in the atmosphere by various industries, vehicles and burning of fossil fuels.

Smog is formed as a result of air pollution. Smog is an air pollutant which is the mixture of fog, smoke and dust particles. It is formed in areas which have large concentration of industries. Heavy automobile traffic also results in the formation of smog.

Water Pollution

According to the World Health Organization, any foreign matter either natural or other sources which contaminate and pollute the water or the water supply making it harmful for human and aquatic life is termed water pollution.

Various types of water pollutants are

- Biological pollutants: Viruses, protozoa, fungus, bacteria, algae
- Organic chemical agents: Gasoline, pesticides, insecticides, oil
- Inorganic chemical agents: Acids, nitrates, phosphates, salts
- Physical pollutants: Suspended solid particles, heat

Soil Pollution

A change or alteration in the natural physical, chemical and biological properties and conditions of soil because of human activities which result in the degradation of the quality and productivity of soil is known as soil pollution.

Various kinds of soil pollutants are

- Organic pollutants: These include human and animal excretion, waste food items, poultry wastes and wastes from food processing industries.
- Inorganic pollutants: Metallic wastes, chemical fertilisers, detergents, oil and heavy metals are some inorganic wastes which pollute the soil. As these wastes do not degrade quickly, they decrease the quality and the productivity of the soil.
- Radioactive substances: These are extremely toxic. They have long-lasting effects on the properties of soil.

Noise Pollution

Any unwanted loud sound which causes stress and irritation can be termed noise pollution.

Main sources of noise pollution are

- Means of transport
- Use of loudspeakers
- Industrial sector
- Celebration of festivals and wedding ceremonies

Noise pollution can have serious effects on human health.

- It may cause impairment of hearing and can cause sleep disruption.
- People who are frequently subjected to a high level of noise pollution may suffer from hypertension, depression and panic attacks.
- It may lead to the abnormal increase of heartbeat and heart palpitation.
- It can also cause migraine headaches, nausea and dizziness.

Radioactive Pollution

Release of radioactive substances into the atmosphere, water and soil mainly because of human activities is known as radioactive pollution.

Radioactive waste is the most dangerous pollutant on the Earth as it is not easy to safely dispose. These wastes remain in the environment for a long period. Any leakage in a nuclear plant may threaten the survival of humans living in nearby areas. It also has disastrous effects on plants, animals and soil.

Environmental radiation can be divided into two types—natural and man-made.

Sources of natural radiation: Cosmic radiations from outer space reaching the surface of the Earth and terrestrial radiation emanating from natural isotopes from the Earth's surface.

Sources of man-made radiation: It originates during the process of making nuclear weapons and nuclear electrical power.

Unsafe disposal of radioactive wastes results in pollution. Radioactive pollution not only results in environmental pollution but also has an adverse impact on human health, plant and animal life. The leakage of gas from the Chernobyl atomic reactor in Russia on 26 April 1986 led to the death of many people. It also affected the plant and animal life in the region.