

POLLUTION AND ITS TYPES

Intro:

- Pollution occurs when pollutants contaminate the natural surroundings, which brings about changes that affect our normal lifestyles adversely.
- Pollutants are the key elements or components of pollution which are generally waste materials of different forms.
- Pollution disturbs our ecosystem and the balance in the environment.
- With modernization and development in our lives pollution has reached its peak; giving rise to global warming and human illness.
- It occurs in different forms; air, water, soil, radioactive, noise, heat/ thermal and light.
- **Every form of pollution has two sources of occurrence; the point and the non-point sources.**
- The point sources are easy to identify, monitor and control.
- The non-point sources are hard to control.

Types & Causes of Pollution

Air Pollution:

- **It** is the most prominent and dangerous form of pollution.
- Excessive burning of fuel for cooking, driving and other industrial activities, releases a huge amount of chemical substances in the air, these pollute the air.
- Smoke from chimneys, factories, vehicles or burning of wood basically occurs due to coal burning; this releases sulphur dioxide into the air making it toxic.
- Release of sulphur dioxide and hazardous gases into the air causes global warming and acid rain; which in turn have increased temperatures, erratic rains and droughts worldwide; making it tough for the animals to survive.
- We breathe in every polluted particle from the air, result is increase in asthma and cancer in the lungs.

Water Pollution:

- It has taken toll of all the surviving species of the earth.
- Almost 60% of the species live in water bodies.
- It occurs due to several factors; the industrial wastes dumped into the rivers and other water bodies cause an imbalance in the water leading to its severe contamination and death of aquatic species.
- Also spraying insecticides, pesticides like DDT on plants pollutes the ground water system and oil spills in the oceans have caused irreparable damage to the water bodies.
- Eutrophication is another big source, it occurs due to daily activities like washing clothes, utensils near lakes, ponds, or rivers.
- This forces detergents to go into water which blocks sunlight from penetrating, thus reducing oxygen and making it inhabitable.
- It not only harms the aquatic beings but it also contaminates the entire food chain by severely **affecting** humans dependent on these.
- Water-borne diseases like cholera, diarrhoea have also increased in all places.

Soil pollution:

- It occurs due to incorporation of unwanted chemicals in the soil due to human activities.
- Use of insecticides and pesticides absorbs the nitrogen compounds from the soil making it unfit for plants to derive nutrition from.
- Release of industrial waste, mining and deforestation also exploits the soil.
- Since plants can't grow properly, they can't hold the soil and this leads to soil erosion.

Noise pollution:

- It is caused when noise which is an unpleasant sound affects our ears and leads to psychological problems like stress, hypertension, hearing impairment, etc.
- It is caused by machines in industries, loud music etc, So an excess of noise in the outdoors leads to "Noise Pollution".

- This can be experienced by too many vehicles honking at the roads, heavy machinery being operated in the open (for ex, a jackhammer), trains, clubs, over populated crowds and many more.

Radioactive pollution:

- It is highly dangerous when it occurs.
- It can occur due to nuclear plant malfunctions, improper nuclear waste disposal, accidents, etc.
- It causes cancer, infertility, blindness, defects at the time of birth; can sterilise soil and affect air and water.

Thermal/heat pollution:

- It is due to the excess heat in the environment creating unwanted changes over long time periods, due to huge number of industrial plants, deforestation and air pollution.
- It increases the earth's temperature, causing drastic climatic changes and extinction of wildlife.

Light pollution:

- Most people can't imagine living without the modern convenience of electric lights.
- For the natural world, though, lights have changed the way that days and nights work.

Consequences of light pollution are:

- Some birds sing at unnatural hours in the presence of artificial light.
- Long artificial days can affect migration schedules, as they allow for longer feeding times.
- Streetlights can confuse newly hatched sea turtles that rely on starlight reflecting off the waves to guide them from the beach to the ocean. They often head in the wrong direction.
- Light pollution, called sky glow, also makes it difficult for astronomers, both professional and amateur, to properly see the stars.
- Plant's flowering and developmental patterns can be entirely disrupted by artificial light.

Effects of Pollution:

Environment Degradation :

- Environment is the first casualty for increase in pollution weather in air or water.
- The increase in the amount of CO₂ in the atmosphere leads to smog which can restrict sunlight from reaching the earth.
- Thus, preventing plants in the process of photosynthesis.
- Gases like Sulfur dioxide and nitrogen oxide can cause acid rain.
- Water pollution in terms of Oil spill may lead to death of several wildlife species.

Human Health :

- The decrease in quality of air leads to several respiratory problems including asthma or lung cancer.
- Chest pain, congestion, throat inflammation, cardiovascular disease, respiratory disease are some of diseases that can be caused by air pollution.
- Water pollution occurs due to contamination of water and may pose skin related problems including skin irritations and rashes.
- Noise pollution leads to hearing loss, stress and sleep disturbance.

Global Warming :

- The emission of greenhouse gases particularly CO₂ is leading to global warming.
- Everyday new industries are being set up, new vehicles come on roads and trees are cut to make way for new homes.
- All of them, in direct or indirect way lead to increase in CO₂ in the environment.
- The increase in CO₂ leads to melting of polar ice caps which increases the sea level and pose danger for the people living near coastal areas.

Ozone Layer Depletion:

- Ozone layer is the thin shield high up in the sky that stops ultra violet rays from reaching the earth.
- As a result of human activities, chemicals, such as chlorofluorocarbons (CFCs), were released into the atmosphere which contributed to the depletion of ozone layer.

Infertile Land :

- Due to constant use of insecticides and pesticides, the soil may become infertile.
- Plants may not be able to grow properly.
- Various forms of chemicals produced from industrial waste is released into the flowing water which also affects the quality of soil.

Mental Stress:

- Noise pollution is known to cause mental stress and depression.
- It can also cause damage to the ear drum which can cause deafness.
- Noise pollution has more of a psychological effect rather than a physical one.

Conclusion

- Pollution not only affect humans by destroying their (respiratory, cardiovascular, neurological) systems.
- It also affects the nature, plants, fruits, vegetables, rivers, ponds, forests, animals, etc, on which they are highly dependent for survival.
- It is important to prevent all these forms to look forward to a greener cleaner and much more pleasant living experience.