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Effect of Pollution on Earth

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Abstract:

The burning of fossil fuels, Sulphur dioxide emitted from the combustion of fossil fuels like coal, petroleum and other factory combustibles are one the major cause of air pollution. In the present paper we discuss about the effect of pollution on Earth in 21 century. The formation and initial phases of Earth. The effect on Air, Water, Soil, different types of pollution such as, Water pollution, Air pollution, Soil pollution, Thermal pollution, Radioactive pollution and light pollution its causes and effect. The formation and effect of acid rain on the Earth. The study shows that, increase in pollution due to industries, e-wastage, sewage, mining, leakages of oil on ocean, use of chemical fertilizers, pesticides in farming are very harmful to living things.

Key words: Earth, Acid rain, Sulphur dioxide, Co₂, Radioactive, Thermal pollution.

Introduction:

When the solar system settled into its current layout about 4.5 billion years ago, Earth formed when gravity pulled swirling gas and dust in to become the third planet from the Sun. Like its fellow terrestrial planets, Earth has a central core, a rocky mantle and a solid crust. Approximately, one-third the age of the universe, by mass from the solar nebula. Volcanic outgassing probably created the primordial atmosphere and then the ocean, but the early atmosphere contained almost no oxygen. The formation of the Earth occurred after this initial phase happened for our Sun. After the Sun was formed, we know from observations and other indirect evidence that there were left over gases and heavier elements. The gravity of the Sun helped to compress these left overs into a disk and start to fuse them together.

Earth's tilted axis causes the seasons. Throughout the year, different parts of Earth receive the Sun's most direct rays. So, when the North Pole tilts toward the Sun, it's summer in the Northern Hemisphere¹.

The Earth's interior is composed of four layers, three solid and one liquid—not magma but molten metal, nearly as hot as the surface of the sun. The deepest layer is a solid iron ball, about 2,400 kilometres in diameter. Above the inner core is the outer core, a shell of liquid iron.

Pollution is the introduction of contaminants into the natural environment that cause adverse change. Pollution can take the form of chemical substances or energy, such as noise, heat or light. Pollutants, the components of pollution, can be either foreign substances or naturally occurring contaminants. It is something introduced into the environment that is dirty, unclean or has a harmful effect. Toxic waste dumped into the water is an example of pollution.

The contamination of air, water, or soil by substances that are harmful to living organisms. Pollution can occur naturally, for example through volcanic eruptions, or as the result of human activities, such as the leaking of oil or disposal of industrial waste².

There are different Types of Pollution:

- Air Pollution.
- Water Pollution.
- Soil Pollution.
- Thermal Pollution.
- Radioactive Pollution.
- Noise Pollution.
- Light Pollution.

1. Air Pollution:

Air pollution is caused by solid and liquid particles and certain gases that are suspended in the air and formation of acid rain. These particles such toxic gases carbon dioxide can come from car and truck exhaust, sulphur dioxide, Nitrogen oxide, cadmium, factories dust, pollen, volcanoes and wildfires. The solid and liquid particles suspended in our air are called aerosols.



High levels of air pollution can cause an increased risk of heart attack, coughing, and breathing problems, and irritation of the eyes, nose, and throat. Air pollution can also cause worsening of existing heart problems, asthma, and other lung complications.

2. Water Pollution:

Various Causes of Water Pollution

- Industrial waste.
- Sewage and waste water.
- Mining activities.
- Marine dumping.
- Accidental oil leakage.
- The burning of fossil fuels.
- Chemical fertilizers and pesticides
- Leakage from sewer lines.



The main problem caused by water pollution is that it kills organisms that depend on these water bodies. Dead fish, crabs, birds and sea gulls, dolphins, and many other animals often wind up on beaches, killed by pollutants in their habitat.

3. Soil pollution :

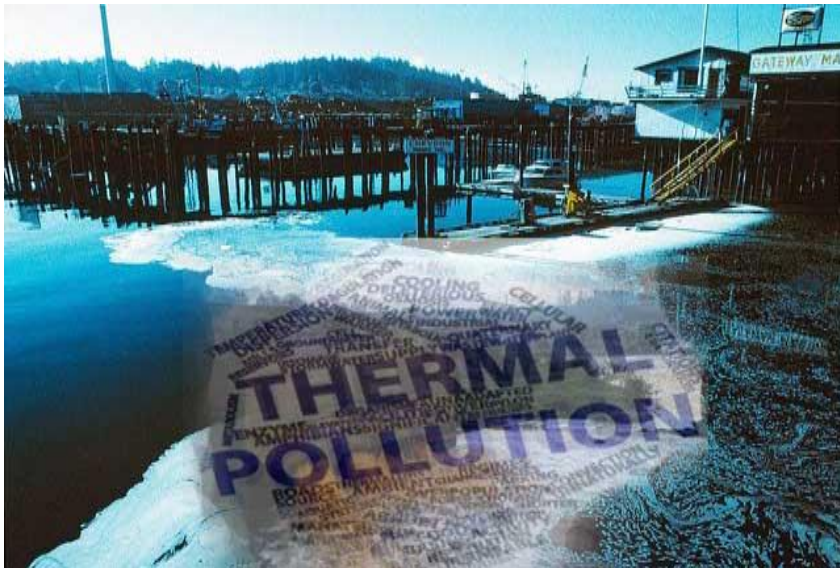
Soil pollution is the presence of toxic chemicals or contaminants in soil, in high enough concentrations to posture a risk to human health and the ecosystem.



Soil pollution refers to anything that causes contamination of soil and degrades the soil quality. The soil contamination can occur due to the presence of chemicals such as pesticides, herbicides, ammonia, petroleum hydrocarbons, lead, nitrate, mercury, naphthalene, etc in an excess amount.

4. Thermal Pollution:

Thermal Pollution is that heat released into rivers, streams, lakes, or reservoirs by use of surface water as a coolant lowers the quality of the habitat, and is thus thermal pollution. Estimates are that 50% of the surface water in the developing country is used as a coolant in power plants or other industrial uses.



Heated water from the industries can be treated before discharging directly to the water bodies. Heated water from the industries can be treated by the installation of cooling ponds and cooling towers. Industrial treated water can be recycled for domestic use or industrial heating.

5. Radioactive Pollution:

The physical pollution of living organisms and their environment as a result of release of radioactive substances into the environment during nuclear explosions and testing of nuclear weapons, nuclear weapon production and neutralizing, mining of radioactive ores.



Radioactive pollution has various effects such as the alteration of cells. The bodies of living organisms are unique in that there are millions of cells in one single body, where each has its purpose to fulfil. Radiation changes the cells present leading to permanent damage of the various organs and organ systems.

6. Noise Pollution:

Noise pollution, also known as sound pollution, is the propagation of noise with harmful impact on the activity of human or animal life. The source of outdoor noise worldwide is mainly caused by machines, transport, and propagation systems. Poor urban planning may give rise to noise breakup or pollution, side-by-side industrial and residential buildings can result in noise pollution in the residential areas. Some of the main sources of noise in residential areas include loudly music, transportation such as traffic, rail, airplanes, grass care maintenance, construction of buildings, construction of roads, electrical generators, explosions, and people.



Unwanted noise can damage physical health. Noise pollution can cause hypertension, high stress levels, tinnitus, hearing loss, sleep disturbances, and other harmful and disturbing effects³.

7. Light Pollution:

The light pollution, also known as luminous pollution, is the excessive use of outdoor lighting. Lighting alters the colour and contrast of the night-time sky, eclipses natural starlight, and disrupts daily times, which affects the environment, energy resources, humans and astronomy research. The danger of light pollution continues to grow as the demand for artificial light increases day-by-day.



Photo pollution is not a new phenomenon. Over the last 50 years, in the developing countries, demand for outdoor lighting increased and light pollution spread beyond the city limits and into suburban and rural areas. This form of pollution is now spread all over the world⁴.

Use of compact fluorescent lamps (CFL) and Light Emitting Diodes (LED) bulbs that produce warm white lighting. Many LED lights emit a blue short wavelength light that scatters easily into the atmosphere, which causes eyestrain, impairs night vision and adds to light pollution. Choose street lamps that are shielded, meaning there is a solid cap above the light bulb that prevents light from being emitted directly to the sky, to minimize sky pollution.

Conclusions:

The above overall study shows that, the effect of pollution on Earth in the 21st century, day-by-day, remarkable increase of pollution affects the living things on Earth. The formation of acid rain due to toxic gases harmful for Earth. We have to minimize the percentage of carbon dioxide, sulphur dioxide, CFC in the air by plantation of a large number of trees. Minimum uses of vehicle and keeping the rivers clean.

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