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Introduction. What is pollution?

Pollution, also called environmental pollution, the addition of any substance (solid, liquid, or gas) or any form of energy (such as heat, sound, or radioactivity) to the environment at a rate faster than it can be dispersed, diluted, decomposed, recycled, or stored in some harmless form. The major kinds of pollution, usually classified by environment, are air pollution, water pollution, and land pollution. Modern society is also concerned about specific types of pollutants, such as noise pollution, light pollution, and plastic pollution. Pollution of all kinds can have negative effects on the environment and wildlife and often impacts human health and well-being.

Pollution disturbs the balance of our ecosystems, affects our normal lifestyles and gives rise to human illnesses and global warming. Pollution has reached its peak due to the development and modernization in our lives. With the development of science and technology, there has been a huge growth of human potentials. People have become prisoners of their own creations.

We waste the bounties of our nature without a thought that our actions cause serious problems. We must deepen our knowledge of nature`s laws and broaden our understanding of the laws of the human behavior in order to deal with pollution problems. So, it is very important to know different types of pollutions, their effects and causes on humanity and the environment we live in.

History of pollution

Although environmental pollution can be caused by natural events such as forest fires and active volcanoes, use of the word pollution generally implies that the contaminants have an anthropogenic source—that is, a source created by human activities. Pollution has accompanied humankind ever since groups of people first congregated and remained for a long time in any one place. Indeed, ancient human settlements are frequently

recognized by their wastes—shell mounds and rubble heaps, for instance. Pollution was not a serious problem as long as there was enough space available for each individual or group. However, with the establishment of permanent settlements by great numbers of people, pollution became a problem, and it has remained one ever since.

Cities of ancient times were often noxious places, fouled by human wastes and debris. Beginning about 1000 CE, the use of coal for fuel caused considerable air pollution, and the conversion of coal to coke for iron smelting beginning in the 17th century *exacerbated the problem*.

In Europe, from the Middle Ages well into the early modern era, unsanitary urban conditions favoured the outbreak of population-decimating epidemics of disease, from plague to cholera and typhoid fever.

Through the 19th century, water and air pollution and the accumulation of solid wastes were largely problems of congested urban areas. But, with the rapid spread of industrialization and the growth of the human population to unprecedented levels, pollution became a universal problem.

By the middle of the 20th century, an awareness of the need to protect air, water, and land environments from pollution *had developed among the general public*. In particular, the publication in 1962 of Rachel Carson's book *Silent Spring* focused attention on environmental damage caused by improper use of pesticides such as DDT and other persistent chemicals that accumulate in the food chain and disrupt the natural balance of ecosystems on a wide scale. In response, major pieces of environmental legislation, such as the Clean Air Act (1970) and the Clean Water Act (1972; United States), were passed in many countries to control and mitigate environmental pollution.

Types, causes, and effects of pollution

Main types of pollution:

1. **Air pollution** is one of the most dangerous forms of pollution.

A biological, chemical, and physical alteration of the air occurs when smoke, dust, and any harmful gases enter into the atmosphere and make it difficult for all living beings to survive as the air becomes contaminated. Burning of fossil fuels, agriculture related activities, mining operations, exhaust from industries and factories, and household cleaning products entail air pollution. People release a huge amount of chemical

substances in the air every day.

The effects of air pollution are alarming. It causes global warming, acid rains, respiratory and heart problems, and eutrophication. A lot of wildlife species are forced to change their habitat in order to survive.

1. **Soil pollution** occurs when the presence of pollutants, contaminants, and toxic chemicals in the soil is in high concentration that has negative effect on wildlife, plants, humans, and ground water.

Industrial activity, waste disposal, agricultural activities, acid rain, and accidental oil spill are the main causes of soil pollution. This type of contamination influence health of humans, affects the growth of plants, decreases soil fertility, and changes the soil structure.

1. **Water pollution** is able to lead our world on a path of destruction.

Water is one of the greatest natural resources of the whole humanity. Nothing will be able to live without water. However, we do not appreciate this gift of nature and pollute it without thinking. The key causes of the water pollution are: industrial waste, mining activities, sewage and waste water, accidental oil leakage, marine dumping, chemical pesticides and fertilizers, burning of fossil fuels, animal waste, urban development, global warming, radioactive waste, and leakage from sewer lines. There is less water available for drinking, cooking, irrigating crops, and washing.

1. **Light pollution** occurs because of the prominent excess illumination in some areas.

Artificial lights disrupt the world`s ecosystems. They have deadly effects on many creatures including mammals, plants, amphibians, insects, and birds. Every year many bird species die colliding with needlessly illuminated buildings. Moreover, artificial lights can lead baby sea turtles to their demise.

1. **Noise pollution** takes place when noise and unpleasant sounds cause temporary disruption in the natural balance.

It is usually caused by industrialization, social events, poor urban planning, household chores, transportation, and construction activities. Noise pollution leads to hearing problems, health issues, cardiovascular issues, sleeping disorders, and trouble communicating.

Moreover, *it affects wildlife a lot*. Some animals may suffer from hearing loss while others become inefficient at hunting. It is very important to understand noise pollution in order to lower its impact on the environment.

1. **Radioactive pollution** is the presence of radioactive substances in the environment. It is highly dangerous when it occurs.

Radioactive contamination can be caused by breaches at nuclear power plants or improper transport of radioactive chemicals. Radioactive material should be handled with great care as radiation destroys cells in living organisms that can result in illness or even death.

Causes of environmental pollution:

1. **Industries**

Industries have been polluting our environment especially since the beginning of the industrial revolution, as mentioned above, notably due to the increasing use of fossil fuels.

Though pollution by industries mainly causes air pollution, soil and water contamination can also occur. This is particularly the case for power-generating industries, such as plants producing electricity.

Also, the transportation of this energy can be harmful to the environment. We can take as an example the transportation of petrol through pipelines; if there is a leak in the pipeline, soil will automatically be polluted. At the same time, if the tanker transporting the petrol from its production plant to the place where it will be consumed leaks or sinks, the water will get contaminated.

1. **Transportation**

Ever since men abandoned animal power to travel, *pollution of the environment has become higher and higher*. Its levels have only been increasing until now. Similarly to industries, pollution caused by transport can mainly be attributed to fossil fuels. Indeed, humans went from horse carriages to cars, trains (which, before electricity, used to be propelled by coal), and airplanes. As the traffic is increasing every day, pollution follows that evolution.

1. **Agricultural activities**

Agriculture is mainly responsible for *the contamination of water and soil*. This is caused by the increased use of pesticides, as well as by the intensive character of its production. Almost all pesticides are made from chemical substances and are meant to keep diseases and threatening animals away from the crops. However, by keeping these forms of life away, harm is almost always made to the surrounding environment as well.

Furthermore, as agriculture gets more and more intensive to feed the increasing world population, more environments and ecosystems are destroyed to make space for the crops. Some of them, like rapeseed –used to make oil – demand a lot of space for a relatively small output.

1. Trading activities

Trading activities including the production and exchange of goods and services. Concerning goods, pollution can be caused by packaging (which often involves the use of plastic, which is made from fossil fuels) or transport, mainly.

1. Residences

Finally, residential areas *provide their fair share of pollution as well*. First, to be able to build homes, natural environment has to be destroyed in one way or another. Wildlife and plants are driven away and replaced by human constructions. As it requires the work of industries, construction itself is also a source of contamination of the environment. Then, when people settle in, they will produce waste every day, including a part that cannot be processed by the environment without harm yet.

Effects of environmental pollution:

1. Effects on Humans

The effects of environmental pollution on humans are mainly physical, but can also turn into neuro-affectations in the long term. The best-known troubles to us are respiratory, in the form of allergies, asthma, irritation of the eye irritation also possible) and nasal passages, or other forms of respiratory infections. Notably, these well spread affectations can be observed when air pollution is high in cities, when the weather gets hot, for instance. On top of that, environmental pollution has been proven to be a major factor in the development of cancer. This can happen for example when we eat reminiscences of pollutants used in the production of processed foods, or pesticides from the crops. Other, rarer, diseases include hepatitis, typhoid affectations, diarrhea and hormonal disruptions.

1. Effects on animals

Environmental pollution mainly affects animal by *causing harm to their living environment, making it toxic for them to live in*. Acid rains can change the composition of rivers and seas, making them toxic for fishes, an important quantity of ozone in the lower parts of the atmosphere can cause lung problems to all animals. Nitrogen and phosphates in water will cause overgrowth of toxic algae, preventing other forms of life to follow their normal course.

Eventually, soil pollution will cause harm and sometimes even the destruction of microorganisms, which can have the dramatic effect of *killing the first layers of the primary food chain*.

1. Effects on plants

As for animals, plants, and especially trees, can be destroyed by acid rains (and this will also have a negative effect on animals as well, as their natural environment will be modified), ozone in the lower atmosphere block the plant respiration, and harmful pollutants can be absorbed from the water or soil.

1. Effects on the ecosystem

In short, environmental pollution, almost exclusively created by human activities, has a negative effect on the ecosystem, destroying crucial layers of it and causing an even more negative effect on the upper layers.

Solutions to pollution problems

At governmental level, great efforts are made to limit the release of harmful substances into the environment through air pollution control, wastewater treatment, solid-waste management, hazardous-waste management, and recycling. Unfortunately, attempts at pollution control are often surpassed by the scale of the problem, especially in less-developed countries. Noxious levels of air pollution are common in many large cities, where particulates and gases from transportation, heating, and manufacturing accumulate and linger. The problem of plastic pollution on land and in the oceans has only grown as the use of single-use plastics has burgeoned worldwide. In addition, greenhouse gas emissions, such as methane and carbon dioxide, continue to drive global warming and pose a great threat to biodiversity and public health.

Environmental pollution has negatively affected the life of both animals and human-beings. The only way to control current environmental issues is to implement

conservation methods and create sustainable development strategies. We should find some effective solutions in order to restore our ecological balance.

First of all, we should make sustainable transportation choices. We should take advantage of public transportation, walk or ride bikes whenever possible, consolidate our trips, and consider purchasing an electric car. It is very important to make sustainable food choices. Choose local food whenever possible; buy organically grown vegetables and fruits or grow your own.

People should conserve energy. Turn off electronics and lights when you are not in the room. Consider what small changes can lead to big energy savings. Use energy efficient devices. It is also essential to understand the concept of reduce, Reuse and Recycle. Try to buy used items whenever possible. Choose products with minimal packaging. Buy reusable items. Remember that almost everything that you purchase can be recycled.

Conserve water as much as possible. Dispose of toxic waste properly. Do not use herbicides and pesticides. Use natural, environmentally friendly chemicals for your everyday chores.

Conclusion

Environmental pollution *is one of the biggest problems caused by human activities* that we should overcome to see a tomorrow and guarantee our descendants a healthy life. There are many environmental concerns for communities around the world to address.

The growth of population and technological progress also has imprints on the ecological stage of Earth. The extraction of natural sources, work of factories and plants, and other products of human activity result in various environmental problems. The pollution of water, air and sound has extremely negative effects on our environment. The environmental pollution is the global problem that calls for radical actions for environment protection and rehabilitation.

We should always remember that pollution problems affect us all so each of us has to do his or her best to help restore ecological balance to this beautiful place we call home. Learn about the major polluters in your area to protect the air and water where you live. Encourage people to stop pollution, tell them everything you know about this problem.

The masses should be educated on the danger of different types of pollution. People should know everything about all consequences of the environmental pollution in order to

prevent the worst from happening.

Our earth is moving on the way to unhealthy future for every living being. So, we must become aware of the factors that pollute our environment and take some *necessary steps to keep our future safe and healthy.*

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