

Topic- Land Pollution: Causes, Effects and Remedies

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4. Land Pollution: Causes, Effects and Remedies

Land pollution is a serious problem that impacts humans, animals, and the earth. Without taking measures now to reduce pollution levels, permanent changes to the land can occur. The adverse changes to the environment due to land pollution are subtle, but the problem is much bigger than it appears.

Land Pollution

The basic definition of land pollution is the destruction and contamination of the land through the direct and indirect actions of humans. The pollution results in changes to the land, such as soil erosion. Some of the changes are irreversible, while others are not.

Causes of Land Pollution

There are several known causes of land pollution. Of those, there are six factors that contribute more than others.

1. Deforestation and soil erosion

When forests are cleared for development and to meet the demand for wood supply, the soil is loosened in the process. Without the protection of the trees, the land becomes barren over time and starts to erode.

2. Agricultural chemicals

Part of the farming process often involves the use of harmful pesticides and insecticides to protect crops. However, the chemicals can cause the land to become barren. The once-fertile soil is then more susceptible to environmental elements, such as the wind.

3. Industrialization

The Industrial Revolution may have resulted in significant positive changes to the economy and society, but it also led to significant pollution of the land. Through unsafe disposal practices for chemicals used in manufacturing, poor regulation, and the overwhelming number of industries and factories that are polluting the land daily, industrialization has become one of the main contributors to the pollution problem.

4. Mining

The mining process can lead to the creation of large open spaces beneath the surface of the earth. This can result in the land caving in, which compromises the integrity of the land. Mining also results in harmful chemicals, such as uranium, being disturbed and released into the environment.

5. Landfills

The garbage found at landfills is filled with toxins that eventually seep into the earth. During rains, the toxins are washed into other areas and the pollution is spread. As the population grows, the amount of garbage filling landfills also grows.

6. Human sewage

Untreated human waste can produce toxic gases that can seep into the ground. As with air pollution, the soil quality is negatively impacted, and land nearby can be contaminated. In addition to this, the probability of human illnesses occurring increases.

7. Industrialization

Due to an increase in demand for food, shelter, and house, more goods are produced. This resulted in creation of more waste that needs to be disposed of. To meet the demand of the growing population, more industries were developed which led to deforestation. Research and development paved the way for modern fertilizers and chemicals that were highly toxic and led to soil contamination.

8. Construction activities

Due to urbanization, a large number of construction activities are taking place which has resulted in large waste articles like wood, metal, bricks, plastic that can be seen by naked eyes outside any building or office which is under construction.

9. Nuclear waste

Nuclear plants can produce a huge amount of energy through nuclear fission and fusion. The left over radioactive material contains harmful and toxic chemicals that can affect human health. They are dumped beneath the earth to avoid any casualty.

Effects of Land Pollution

The contamination of the land has far-reaching consequences that can be catastrophic for water, soil, and animals. There are several possible consequences of land pollution to the environment and animals.

1. Ground water poisoning

Depending on the soil and whether the chemicals were improperly disposed of on the land, the chemicals could end up in the ground water. The process is known as leaching. It can occur on farms, industrial sites, and landfills.

2. Water nutrient enrichment

Chemicals, such as nitrogen, are used frequently on farms. Only a small portion of the nutrients end up benefitting the crops. The remainder usually ends up in water that is populated by fish, algae, and other life forms. The nutrient-heavy water saps up most of the oxygen in the water, which leaves little for fish and other life. When this happens, the water is unable to support most lifeforms. For more information on water pollution.

3. Soil pollution

Soil pollution is another form of land pollution, where the upper layer of the soil is damaged. This is caused by the overuse of chemical fertilizers, soil erosion caused by running water and other pest control measures; this leads to loss of fertile land for agriculture, forest cover, fodder patches for grazing, etc.

4. Air pollution

Landfills across the city keep on growing due to an increase in waste and are later burned which leads to air pollution. They become home for rodents, mice, etc which in turn transmit diseases.

5. Shifting habitat

As deforestation and soil erosion progress, animals are forced to move to find shelter and food. For some animals, the change is too traumatic, and this has led to some dying. As a result, some species are at a greater risk of extinction.

6. Environmental impact

When deforestation is committed, the tree cover is compromised. This leads to a steep imbalance in the rain cycle. A disturbed rain cycle affects a lot of factors. The green cover is reduced. Trees and plants help balance the atmosphere, without them we are subjected to various concerns like Global warming, the greenhouse effect, irregular rainfall and flash floods among other imbalances.

7. Distraction for tourists

The city loses its attraction as a tourist destination as landfills do not look good when you move around the city. It leads to a loss of revenue for the state government.

8. Effect on wildlife

The animal kingdom has suffered most in the past decades. They face a serious threat with regards to the loss of habitat and natural environment. The constant human activity on land, is leaving it polluted; forcing these species to move further away and adapt to new regions or die trying to adjust. Several species are pushed to the verge of extinction, due to no homeland.

Other issues that we face include increased temperature, unseasonal weather activity, acid rains, etc. The discharge of chemicals on land, makes it dangerous for the ecosystem too. These chemicals are consumed by the animals and plants and thereby make their way in the ecosystem. This process is called biomagnifications and is a serious threat to the ecology.

9. Effects of Land Pollution on Humans

The impact of land pollution is not limited just to the earth and animals. Humans can also experience negative consequences that can influence quality of life and health.

Some of the potential consequences include birth defects, the development of breathing disorders, skin diseases, and cancer. Most of these develop after exposure to waste from water poisoning and soil contamination.

Chemicals that are commonly found in contaminated soil and water, such as lead, have can impact a child's cognitive development even if the exposure is very low.

Remedies to Land Pollution

There are several possible solutions to land pollution, including conservation. Conservation focuses on preserving natural resources, such as soil and plants. The efforts to conserve resources can start with utilizing sustainable practices.

For instance, leaving some of the trees in a forest to naturally die and decay. This not only leaves the cover needed for the soil and other vegetation, but it helps to provide the nutrients that the soil needs to remain fertile. Other solutions include:

- Proper waste disposal that focuses on treating waste and disposing it in the safest manner possible.
- Reusing materials to reduce the need for harvesting of resources. Products that are not reusable can likely be recycled.
- Reducing the usage of non-biodegradable materials, such as plastic shopping bags. The simple act of switching to a reusable cloth bag for groceries can help cut down on the need for non-biodegradable materials.
- Organic gardening can reduce the usage of pesticides and insecticides. Non-gardeners can help by buying organic food.
 - Create dumping ground away from residential areas.

Conclusion

The negative consequences of land pollution can be greatly reduced with the cooperation of everyone. By making a conscious effort to contribute to a safer environment, the health and well-being of all can be protected.