


Water pollution

Water pollution may be defined as “the alteration in physical, chemical and biological characteristics of water which may cause harmful effects on humans and aquatic life”. Water pollution is caused by the intentional or unintentional release of toxic chemicals or materials, contaminants and harmful compounds into various sources of water such as rivers, lakes and the ocean. Without proper disposal or filtration of these pollutants they can spread throughout the water and effect all living animals and organisms that come into contact with it by contaminating any living thing that requires water for survival.

In addition to harming animals water pollution can also affect plants, trees, the soil and other natural materials and resources of the earth. Water pollution has become a growing concern over the last century as more and more waste is being disposed of in our oceans, rivers and lakes. It is also creating issues in the oceans ecosystem and hurting the animals and plant life that rely on the ocean and rivers for their survival

Causes of water pollution

There are numerous causes of water pollution. The few of them are listed below:

- a. **Industrial process:** When manufacturers and factories are simply allowed to pour toxic chemicals into water sources before treatment, the water becomes polluted. The oxygen levels in the water also decreases. The toxic chemicals include: lead, sulfuric acid, mercury and used oil.
- b. **Inorganic Industrial waste:** Inorganic wastes such as acids, mercury, lead and heavy metals can destroy the normal processes of rivers, lakes and the ocean. The presence of these toxic and corrosive substances in water is dangerous to living things. Factories and other industries dump waste products into water at an alarming rate.
- c. **Agricultural fertilizers:** By a process known as leach  agricultural chemicals such as fertilizers and pesticides can wash into rivers and lakes, poisoning them.
- d. **Untreated sewage from households:** Dye, lotion, soap, hair oil, shampoo, powder, deodorant, moisturizer and many other such products also contribute in water pollution. These products go to the sewage without any treatment. Untreated sewage from households can contaminate different water sources. When sewage pipes break, there is a chance that the wastes will contaminate drinking water. Sometimes, poorly treated sewage is released into water sources. Domestic cleaning products can be very dangerous pollutants.
- e. **Garbage:** Plastics are non-biodegradable. Mass plastics clog water sources and contaminate it.
- f. **Urbanization:** Urbanization is a key factor in increasing the amounts of water pollution.
- g. **Dumping solid waste:** Humans often carelessly dump their trash in the sea or near rivers.
- h. **Oil spills:** Accidental oil spills have a devastating effect on seas.
- i. **Dissolved gases:** Polluting gases in the air can dissolve into salt and fresh water and pollute it.
- j. **Boat fuels:** Fossil fuels used in the shipping industry are one of the largest causes of both air and water pollution.
- k. **Heated water from power plants:** Some power plants release the heated water into water sources. This reduces the oxygen content in water. Power plants normally use heated water to cool their machines.

Effects of water pollution:

Water pollution damages human health makes our living conditions precarious and threatens life on the planet.

- a. **Water becomes dangerous to drink:** Humans have less safe drinking water.
- b. **Less clean water for agriculture:** we need unpolluted water to irrigate crops, too.
- c. **Economic costs:** When water has been polluted, there is money needed to purify water, remove plastics from water sources and so on.
- d. **Change in water color:** Polluted water becomes visibly different.

- e. **Waterborne diseases:** Living near to polluted water can put humans at risk of diseases. Waterborne diseases occur when sewage combines with drinking water, there is a likelihood of a breakout of diseases. If people end up drinking this water, they might suffer from diseases such as typhoid, cholera and dysentery.
- f. **Fewer possibilities for leisure:** Swimming, sailing, surfing and other water sports are definitely not advised in polluted water.
- g. **Acidic rain:** When toxic gases and smoke is released from industries, cars and homes, the gases lead to formation of acid rain. Acidic rain is a threat to human health and it also affects the living organisms in soil. It causes the oceans to acidify
- h. **Genetic mutations:** The genes of marine and freshwater plants and animals mutate
- i. **Algae bloom:** An excess of oxygen in waters due to a change in the chemical composition causes algae to bloom in overabundance and block out the light in pools and river.
- j. **Damage to the ecosystems:** Ecosystem is the interaction of living things, depending on each other for life. When their habits become polluted, marine and freshwater organisms are at risk of extinction. When aquatic life is threatened the entire ecosystem is disturbed.

Solutions to water pollution

It is in our power to halt water pollution. Some of the key solutions that can be applied are outlined below.

- a. **Stop using harmful chemicals at home:** Environmentally friendly household cleaners must be used.
- b. **Prevent industrial waste from reaching water:** Dispose of industrial waste by burying or neutralizing it instead.
- c. **Sewage treatment:** Household water should be properly treated to make it environmentally safe. Raw sewage should never be pumped into water. This may seem like a convenient way of disposing of it but it is highly dangerous for health. Effective sewage treatment processes should be put in place.
- d. **Treatment of industrial wastes before discharge:** Factories should treat wastes before discharge and toxic substances should be converted into harmless materials.
- e. **Recycle:** Recycle domestic and commercial waste safely rather than dumping it in the sea or near rivers.
- f. **Promote a love for waterways:** That way, everyone in the community will be motivated to stop pollution. When we all work together, we can achieve great things.
- g. **Go organic:** Organic agriculture uses far fewer chemical pesticides and fertilizers. Manure should be used instead of fertilizers because unlike fertilizers, it does not contain harmful chemicals
- h. **Adherence to water laws.** Laws and legislation regarding water pollution should be strictly followed. There should be heavy penalties for those who fail to adhere to the rules.
- i. **Avoid using paper bags:** Carry a shopping bag whenever you expect to go shopping. This will minimize the chances of you using a paper bag. You can also buy a portable shopping bag and always have it with you.
- j. **Improve oil tanker safety:** Avoiding oil spills would remove a key cause of environmental pollution.
- k. **Routine cleaning:** Wells and lakes should be regularly cleaned and treated to ensure that they remain safe for human use. There should also be system of regularly testing pond and lake water.
- l. **Avoid pouring medicine and insecticides in toilets and sinks:** Throw such waste in the bathroom toilet. This is important because if poured in toilets and sinks, these products could combine to form harmful products.