### Presentation on:

## Water Pollution

definition, causes, effects and control or preventive measures

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## Introduction

## WATER

### What is water pollution?

Water pollution occurs when energy and other materials are released into the water, contaminating the quality of it for its users



### Water pollution is the contamination of water

bodies (e.g. lakes, rivers, aquifers etc. This form of environmental degradation occurs when pollutants are directly or indirectly discharged into water bodies without adequate treatment to remove harmful compounds.



### Causes of water pollution

#### Industrial waste:

- Many regular industrial activities release enormous amount of toxic chemicals such as lead mercury.
- They spread to other living species when humans use these contaminated products for regular purposes.
- Waste from manufacturing, construction, mining and other industries



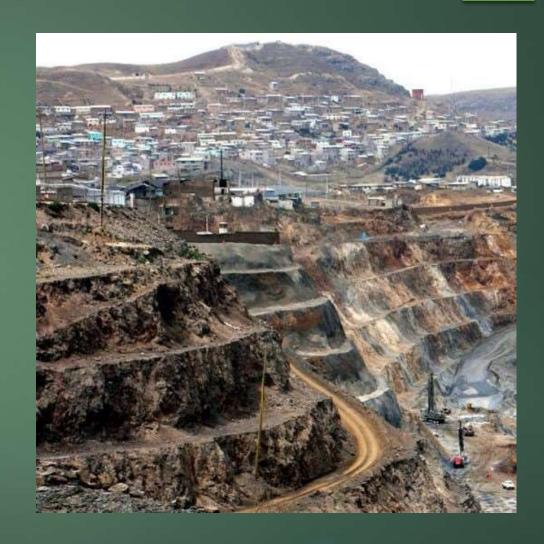
#### Sewage and waste

- The term 'sewage'
  describes raw sewage,
  septic tank sewage etc.
- Tonnes of sewage are dumped into water bodies.
- This not only causes pollution but also diseases



#### Mining

- Mining is the key major causes of lake and river pollution
- This process brings out harmful chemicals that are buried deep under the earth surface.
- When this comes in contact with water, the effects are dangerous to any living creature



## Agricultural pollution and waste

- Agricultural pollution refers to the abiotic and biotic byproducts of farming practices that results in contamination or degradation of environment and surrounding ecosystem or causing injury to humans and their economic interests.
- Agricultural wastes from fertilizers, pesticides, weedicides etc. runoff during irrigation or rainfall and flow into water bodies.
- These chemicals cause water pollution in a very short span of time.



#### **Marine dumping**

- The garbage generated everyday is dumped into the seas and oceans.
- These marine dumping has even given rise to garbage islands.
- An easy step of throwing these waste products into the bin can reduce more than half of the water pollution levels.





#### Radioactive wastes

- After usage of radioactive materials for nuclear wagons or as energy sources, they are mostly dumped into water bodies or in glaciers.
- They immediately mix with water bodies when the temperature rises.



## Effects of water pollution

## Water pollution on food chain

Pollution disrupts the food chain by moving the toxins from one level in the chain to higher levels. In some cases, pollution can wipe out the entire part of the food chain. Such affects the other organism by either causing excessive growth in case the predator dies or a level of food chain is wiped out.



# Water pollution on human beings

Water pollution is a severe environmental problem that has an impact on people's health and well being all over the world. It can result from various sources such as agricultural runoff, industrial discharge and sewage. It usually occurs when a body of water becomes contaminated, usually by chemicals or microorganism.



# Water pollution on aquatic life

Water pollution affects aquatic life by killing them and by disrupting the food chain. When polluting elements like sewage are dumped into the ocean, animals that depend on the ocean to survive, such as crab and fish die off. This is because the animals could be infected by diseases from the sewage or be harmed by trash that is thrown in the ocean



# Destruction of ecosystem

The introduction or elimination of certain microorganism distorts the ecosystem. Nutrient pollution, for example leads to an increase in algae which depletes the water of oxygen, thereby leading to The introduction or elimination of certain microorganisms the death of fish and other aquatic life



## control/preventive measures

## Control/preventive measures

- Separate drainage of sewage and rain water should be provided to prevent overflow of sewage with rain water
- Water should be treated by primary and secondary treatment to reduce BOD,COD levels up to permissible levels of discharge
- Industrial water should be treated in order to reduce their toxicity.
- Non biodegradable wates materials should not be dumped in water bodies. These not only pollute the water but also choke the aquatic organisms to death.



# Control/preventive measures

- Mass social awareness should be inculcated regarding the nature and effects of water pollution and remedial measures
- Strict laws should be enforced and persons violating the provisions should be penalised
- The legislative provisions, such as the water act 1974 and control of pollution prevention and environment protection act 1986 are there but these have not been implemented strictly for effective prevention of water pollution



#### Conclusion:

- Water pollution is the contamination of water bodies by various polluting elements such as sewage, plastics, industrial effluents etc.
- Some of their causes are: industrial wastes, sewage, agriculture, mining, marine dumping and radioactive elements.
- Some effects of water pollution are: disturbs the food chain, affect human beings, affects the aquatic life and destruction of the ecosystem
- Some preventive measures are: sewage and industrial water should be treated, nonbiodegradable wastes should not be left out into the water bodies, mass social awareness should be inculcated and the provisions for preventive measures should be strictly followed.

