



## **WATER POLLUTION**

Water pollution is referred as a presence of foreign substances or impurities which can contribute to health hazards by lowering water qualities and making it unfit for use.

### **Sources of Water Pollution**

Main sources of water pollution are

Pollution due to decaying of plants, animals and organic matter in water bodies

Addition of soil-silt washings, insecticides, herbicide and fungicides are agricultural sources can be water pollution.

Ore washing, inert suspended solid and soluble toxic materials.

Sewage obtained from domestic premises, institutions and industrial buildings are main sources of pollution of water in cities.

Industrial Effluents are one of the important agents of water pollution.

Accidental spillage of chemical or petroleum products also contributes towards water pollution.

Ground water pollution with arsenic, fluorides and nitrites which are poisonous in nature are posing serious health problems.

Major point sources of water pollution are industries, power plants, underground coalmines, offshore oil wells etc.

### **Water Pollutants**

Major water pollutants are

**Organic pollutants:** Water carrying organic pollutants have decreased level of oxygen and such organic pollutants promote disease causing agent.

**Inorganic pollutants:** Inorganic pollutants include inorganic salts, metallic compounds, trace elements and organ metallic compounds.

**Thermal pollutants:** Main source of thermal pollutants are coal water plants, nuclear water plants and other industrial process.

Sediments

Radioactive materials

## Effects of Water Pollution

Sewage is an excellent medium for growth of pathogens which are responsible for spread of many diseases.

Water pollution makes the drinking water unfit for domestic use. Industrial effluents have harmful effect on living organism and can lead to death.

Radioactive substances present in the water may cause cancer, eye, cataract and DNA breakage; it may also destroy biological immune system.

Residual toxic compounds of pesticides may cause many health problems.

Sediments reduce the light penetration in water which lowers the photosynthetic activity of aquatic plants.

Toxic substances observed into tissues from polluted water can cause injuries leading death of the plant.

**Eutrophication:** It is the ecosystem response to the addition of artificial or natural substances, such as nitrates and phosphates, through fertilizers or sewage, to an aquatic system. One example is the "bloom" or great increase of phytoplankton in a water body as a response to increased levels of nutrients. Negative environmental effects include hypoxia, the depletion of oxygen in the water, which induces reductions in specific fish and other animal populations. Eutrophication can be human-caused or natural. Untreated sewage effluent and agricultural run-off carrying fertilizers are examples of human-caused eutrophication. However, it also occurs naturally in situations where nutrients accumulate (e.g. depositional environments), or where they flow into systems on an ephemeral basis.

## Prevention and Control of Water Pollution

It is said that prevention is better than cure. Strict legislation can help to reduce water pollution and policy maker should formulate strategies to prevent water pollution sources.

Following measures can help to control water pollution

Prevent generation of pollutants at first place. Control the pollutants to minimise its effects on water pollution.

Domestic and industrial waste water should be disposed off only after treatment.

Enforce pollution control laws strictly.

Use treatment plants to clean discharged industrial waste water and utilise it for irrigation purpose.

Discourage excess use of pesticide and insecticide.

Water bodies should be regularly cleaned of aquatic weed and wild plants

Create public awareness regarding water pollution

Afforestation will help to reduce the pollution and water erosion

Use methods of biological nitrogen fixation to improve soil health and adopt integrated pest management to minimise chemical contamination in water.

