

(2019-2020)

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ENVIRONMENTAL
CHALLENGES TODAY:
GLOBAL PERSPECTIVE

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Signature

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ment and Human Health			

pollution added into surface water. Sources of air pollution are common as discussed above in air pollution.

Air Pollution

also source of fresh water. Pollution affects aquatic life in lake. Aquatic biota adversely affected due to high load of pollution. Because lakes drain a large load of pollution. Sources of lake water pollution are agricultural, industrial, and domestic. Sources of organic waste from hilly areas. Industrial discharge of organic waste from hilly areas. Agricultural discharge of pesticides and fertilizers. Domestic discharge of sewage, siltation. Agricultural discharge of pesticides and eutrophication.

Water Pollution

one of the most dynamic fresh water resource on the earth. In India there are 14 major river severely polluted. Continuous addition of waste water through various sources. River water pollution is a global problem. In India. Rising pollution of rivers in India is a major concern for government and public health point of view. The main causes of water pollution are: 1. Discharge of untreated effluents from industries and urban areas. 2. Discharge of agricultural runoff. 3. Discharge of domestic sewage.

Marine Pollution

Marine pollution occurs when harmful discharge of waste into the ocean. Sources of marine pollution are: 1. Discharge of oil from ships. 2. Discharge of sewage. 3. Discharge of solid waste. 4. Discharge of toxic substances. 5. Discharge of radioactive waste. 6. Discharge of agricultural runoff. 7. Discharge of domestic sewage. 8. Discharge of industrial effluents. 9. Discharge of atmospheric pollutants. 10. Discharge of noise. 11. Discharge of heat. 12. Discharge of acid rain. 13. Discharge of carbon dioxide. 14. Discharge of other greenhouse gases. 15. Discharge of other pollutants.

CAUSES OF WATER POLLUTION

- i. **Industrial Waste:** Industrial sector generate huge amount of waste which contains number of toxic chemicals and pollutants like mercury, lead, asbestos, nitrate and other harmful chemicals. Many industries do not have waste disposal management system and releases their waste directly into freshwater bodies.
- ii. **Sewage and Waste Water:** The sewage is waste water generated from each household and released into freshwater reservoir. The sewage water carries harmful bacteria and chemicals that can cause serious health problems.
- iii. **Mining Activities:** Mining is the process of crushing rock and extracting coal and other minerals from earth interior. Mining activities emit a large amount of elements, chemicals, metal waste and sulphide from rock which is harmful to the water.
- iv. **Chemical Fertilizer and Pesticides:** Heavy use of chemical fertilizers and pesticides by farmers to protect crop and obtained more yield. During rainy season these chemicals are washed away through surface runoff and reaches underground water, rivers and ultimately to sea and oceans. This causes serious damage to aquatic life.
- v. **Radioactive Waste:** Nuclear energy is produced using nuclear fission or fusion. The element Uranium is highly toxic chemical. The nuclear waste that is produced by radioactive material needs to be disposed properly to prevent any accident.

Effects of Water Pollution

Pollution of water affects both human and aquatic life. Following are some of the common adverse effects of polluting water bodies.

Effects on Human Health

According to WHO 2017 report 2.1 billion people do not have access to safe water. In 2019, it is stated that 785 billion

Water Pollution Sources Causes and Effects on Life

Mukke V.K. and Kamble S.N.

Synergi Arts, Science College, Shirur Anantpal, Dist. Latur

INTRODUCTION

Water is the essential natural resource on the earth. Without water there would be no life. Therefore water is very precious resource. However, the water is most exploited resource since industrialization and increased population increases the demand of water day by day. In the present day ground water is the reliable source for various activities such as domestic use, irrigation, and construction activity etc. But today various human activities are constantly adding hazardous waste to ground water at alarming rate. Ground water contamination is irreversible that means once it is contaminated, it is difficult to restore original water quality. Ground water pollution is affected by some factor like rainfall pattern, depth of water table, and distance from the source of contamination. Soil structure, texture and rate of filtration. Ground water pollution occur due to sources like domestic waste, industrial effluent, agricultural discharge, runoff from urban areas, refuse dump, earthen septic tank, seepage pit, waste water treatment lagoons, mine spills etc.

Water pollution is the change or alteration in physical, chemical and biological characteristics of water which may cause harmful effect on life. Water pollution is a serious health hazard in India. About 50-60% of Indian population suffers from different diseases by polluted water. Water pollution is leading worldwide cause of death and diseases. Therefore water pollution is a major global problem.

Water pollution disturbs the normal use of water for various purposes like irrigation, agriculture, industry, public water supply and aquatic life. It is now considered not only in terms of public health, but also in terms of conservation, aesthetic and preservation of natural beauty and resources.

Pollution of water occurs easily by many ways the chief sources are natural processes and Anthropogenic processes. Natural processes like decaying of plant and animal, volcanic eruptions, cyclone, forest fire etc. Anthropogenic activities like industrial, agricultural, urban waste, domestic waste,

mining processes, use of pesticides and fertilizers etc added enormous amount of pollutant into various water bodies and causes pollution of waters.

TYPES OF WATER POLLUTION

Water pollution can be classified into following category based on sources and storage of water.

Ground Water Pollution

Groundwater is important natural resource. It acts as a reservoir. The accelerated pace of development and rapid industrialization and increased population increases the demand of water day by day. In the present day ground water is the reliable source for various activities such as domestic use, irrigation, and construction activity etc. But today various human activities are constantly adding hazardous waste to ground water at alarming rate. Ground water contamination is irreversible that means once it is contaminated, it is difficult to restore original water quality. Ground water pollution is affected by some factor like rainfall pattern, depth of water table, and distance from the source of contamination. Soil structure, texture and rate of filtration. Ground water pollution occur due to sources like domestic waste, industrial effluent, agricultural discharge, runoff from urban areas, refuse dump, earthen septic tank, seepage pit, waste water treatment lagoons, mine spills etc.

Surface Water Pollution

Surface water comes in direct contact with various pollutants from atmosphere, seasonal stream, rivulets and surface debris. Surface water pollution can also affect by some factors like rate of self purification, waste water disposal system adopted, human activities near the surface water, quality or degree of

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people lack access to essential drinking water. WHO report that 120000 cholera related death annually. Arsenic in ground water affect 2 lac people across the world facing the clinical findings like meanosis, hyperkeratosis, bronchittis, gangrene in limb, anemia, ascitis, nausea, diarrhea etc.

Death of Aquatic Biota

Animals and plants that depend on water for their life processes are most affected by polluted water. Release of toxic pollutant causes killing and destruction of aquatic biota. According to the report of center for biological diversity in 2010 the spill on the Gulf of Mexico harmed over 82000 birds, 25900 marine animals, 6165 sea turtle and more number of fishes and invertebrates.

Food Chain Disruption

Heavy pollution load in any water body affect penetration of light, deplete oxygen level and affect the process of photosynthesis and respiration. As a result of it organism perished from aquatic ecosystem and disturb the food chain eventually.

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