

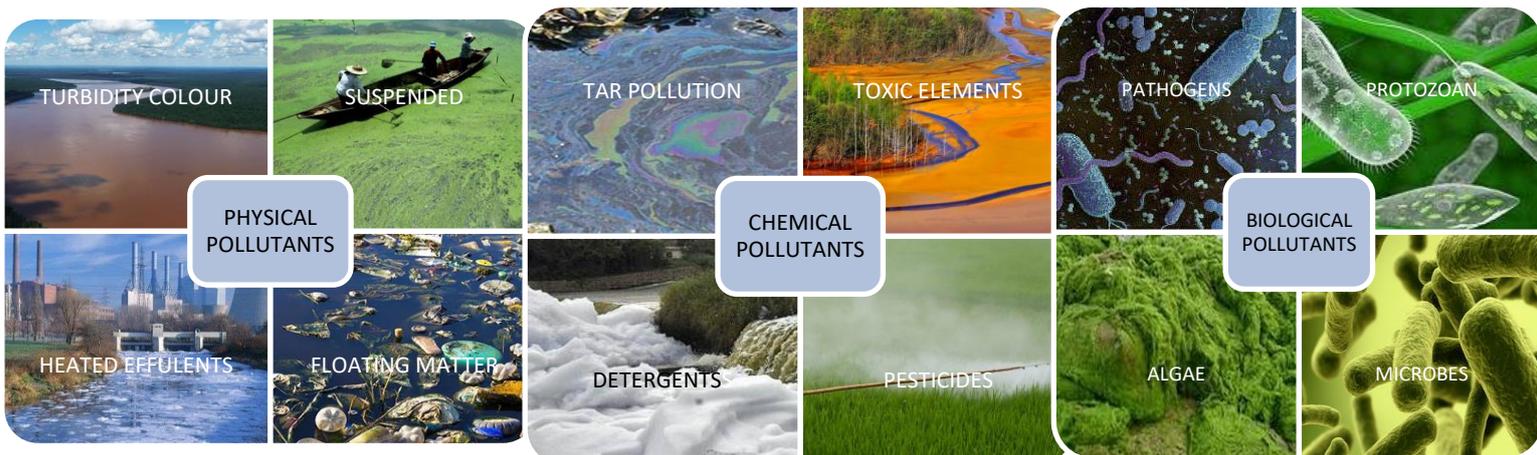
WATER POLLUTION

- ✓ Water is a renewable resource. It is essential for sustaining all forms of life, food production, economic development, and for general wellbeing.
- ✓ The freshwater ecosystems of the world comprise only about 0.5% of the earth's surface. Rivers constitute an insignificant amount (0.1%) of the land surface
- ✓ In the last few decades, there has been a tremendous increase in the demand for freshwater due to rapid
- ✓ Anthropogenic activities related to extensive urbanization, agricultural practices, industrialization, and population expansion have led to water quality deterioration in many parts of the world
- ✓ protecting river water quality is extremely urgent because of serious water pollution and global scarcity of water resources

SOURCES

Point sources	Non point sources
<ul style="list-style-type: none"> ➤ Point sources of pollution are those which have direct identifiable source ➤ Waste water effluent (municipal and industrial) ➤ Runoff and leachate from waste disposal sites ➤ Runoff and infiltration from animal feedlots ➤ Runoff from mines, oil fields, industrial sites ➤ Storm sewer outfalls from cities ➤ Overflows of combined storm and sanitary sewers ➤ Runoff from construction sites 	<ul style="list-style-type: none"> ➤ Runoff from agriculture ➤ Runoff from pasture and range ➤ Urban runoff ➤ Septic tank leachate and runoff from failed septic systems ➤ Runoff from abandoned mines ➤ Atmospheric deposition over a water surface ➤ Activities on land that generate contaminants, such as logging, wetland conversion, construction, and development of land or waterways

CLASSIFICATION



EFFECT OF WATER POLLUTION ON HUMAN

- ✓ **CADMIUM**- may result into many renal diseases like "Itai-itai disease", nephritis and nephrosis
- ✓ **MERCURY**- causes chromosomal aberrations and neurological damages to human. Mercury shows biological magnification in aquatic ecosystems
- ✓ **WATER BORNE DISEASE**- Polluted water can cause typhoid fever, diarrhoea, dysentery, gastroenteritis and cholera.
- ✓ **FLUORINE**- exposure to higher levels above 0.5 mg/l for 5-6 years may lead to adverse effect on human health leading to a condition called fluorosis
- ✓ **ARSENIC**- causing respiratory cancer
- ✓ **LEAD**- it affects the blood, central nervous system and the kidneys.

EFFECT OF WATER POLLUTION ON PLANT

- ✓ **EFFECTS OF ACID DEPOSITION** - lakes, river and ponds acidic.
- ✓ **NUTRIENT DEFICIENCY IN AQUATIC ECOSYSTEM** - Population of decomposing microorganisms decline in acidified water which in turn reduces the rate of decomposition of organic matter affecting the nutrient cycling.
- ✓ **EFFECTS OF DETERGENT DEPOSITION** - causing retarded growth of plants, elongation of roots, carbon dioxide fixation, photosynthesis, destruction of chlorophylls
- ✓ **EFFECTS OF AGRICULTURAL CHEMICALS** - reduction in photosynthetic rate.
- ✓ **EFFECTS OF ORGANIC MATTER DEPOSITION** - growth of green and blue-green algal bloom results in reducing the dissolved Oxygen and increase in the biological oxygen demand (B.O.D).



- *Digging ponds, lakes, canals, expanding the water reservoir etc.*
- *Protecting ground water resources and practicing sustainable methods of utilizing groundwater resources.*
- *Overhead irrigation, drip irrigation system is recommended for optimal water use in agriculture.*
- *Treatment of waste water*



1. **ENSURING AVAILABILITY OF WATER FOR FUTURE GENERATIONS WHERE THE WITHDRAWAL OF FRESHWATER FROM AN ECOSYSTEM DOESN'T EXCEED ITS NATURAL REPLACEMENT RATE.**
2. **DEVOTING A HIGHER PERCENTAGE OF ELECTRICITY FOR WATER MANAGEMENT**
3. **HABITAT CONSERVATION WHERE HUMAN WATER USE HELPS TO PRESERVE FRESHWATER HABITATS FOR LOCAL WILDLIFE AND**

CONTROL

Stop washing clothe alongside the river bank

Stop dumping of domestic waste into the river

Industries should install effluent treatment plant to control the pollution at source

All towns must have sewage treatment plant

Religious practices that pollute river water by dumping idols should be stopped

Organic farming should be adopted

Awareness campaigns and education programmes regarding pollution must be carried out

Polluter pays principle should be designed to prevent people from polluting and making them behave in an environmentally responsible manner

Reduce the use of herbicides, pesticides, and fertilizers

Do not dispose of household chemicals down the sink or toilet

Do not flush pills , liquid or powder or drugs down the toilet.

WATER CONTROL POLICY OF INDIA

- ✓ The Water (Prevention and Control of Pollution) Act was enacted in 1974 to provide for the prevention and control of water pollution, and for the maintaining or restoring of wholesomeness of water in the country.
- ✓ The Water (Prevention and Control of Pollution) Cess Act was enacted in 1977, to provide for the levy and collection of a cess on water consumed by persons operating and carrying on certain types of industrial activities.
- ✓ This cess is collected with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution constituted under the Water (Prevention and Control of Pollution) Act, 1974.