Water Pollution

Water Pollution

* Water pollution is any physical or chemical change in surface or ground water that can harm living things.

Types of Pollutants

* 1) Chemical
  * Such chemicals can kill living organisms, cause deformities, or they can have toxic / poisonous effects to a food web via bioamplification.

* Types of chemical pollutants
  * Pesticides
  * Oil and Grease
  * Detergents
  * Fertilizers
  * Acid Rain

Types of Pollutants

* 2) Thermal
  * Power plant turbines increase water temperatures (abnormal)
    * Mimics warm seasons at wrong times of year and affects life cycles of aquatic organisms
    * More detritus and decomposition, which leads to less oxygen

Types of Pollutants

* 3) Organic Waste
* Adding organic substances not normally occurring
  * e.g., sewage, animal wastes, decaying plants, industrial deposits
* Increases amount of naturally-occurring substances

Types of Pollutants

* 4) Disease Causing Organisms
  * Bacteria from sewage and animal wastes
  * e.g., coliform bacteria – found inside intestinal tracts (E. coli)

Water Pollution Indicators

* Water becomes murky (algal bloom, detritus)

Water Pollution Indicators

* Foul odour (decay and decomposition)
* Death of plants and/or animals
* Increase in Bacteria
* Decrease in Dissolved Oxygen

Pollution Testing: Dissolved Oxygen

* Less dissolved oxygen in an aquatic ecosystem means less organisms that water can support.
    * Testing dissolved oxygen levels (using chemicals or sensors) can be an indicator for pollution.

Water Pollution Sources

* a **Point source** is where pollution is directly occurring and affecting a specific, single location.
* Example: waste disposal (industry, sewage treatment), oil tanker leak
* Effects are most severe at the point of entry

Water Pollution Sources

* a **Nonpoint source** is where pollution begins at one location and travels to affect other locations.
* Example: runoff from farms & forests, ground water from cities & industries
* Effects are widespread, variable, and often repeated