



Pollution

✓ Meaning

✓ Types

✓ Causes

✓ Remedies

✓ Land

✓ Air

✓ Water

✓ Others

Meaning of Pollution

- Introduction of contaminants into the natural environment that cause adverse change
- Pollutant is a waste material that pollutes air, water or soil



Types of Pollution

- **Water Pollution:** involves any contaminated water
- **Air Pollution:** contamination of the atmosphere
- **Land pollution:** Deterioration (destruction) of the earth's land surfaces, often directly or indirectly as a result of man's activities and their misuse of land resources
- **Soil Pollution:** contamination of the soil that prevents natural growth and balance in the land
- **Noise Pollution:** undesirable levels of noises caused by human activity that disrupt the standard of living
- **Thermal Pollution:** excess heat that creates undesirable effects over long periods of time



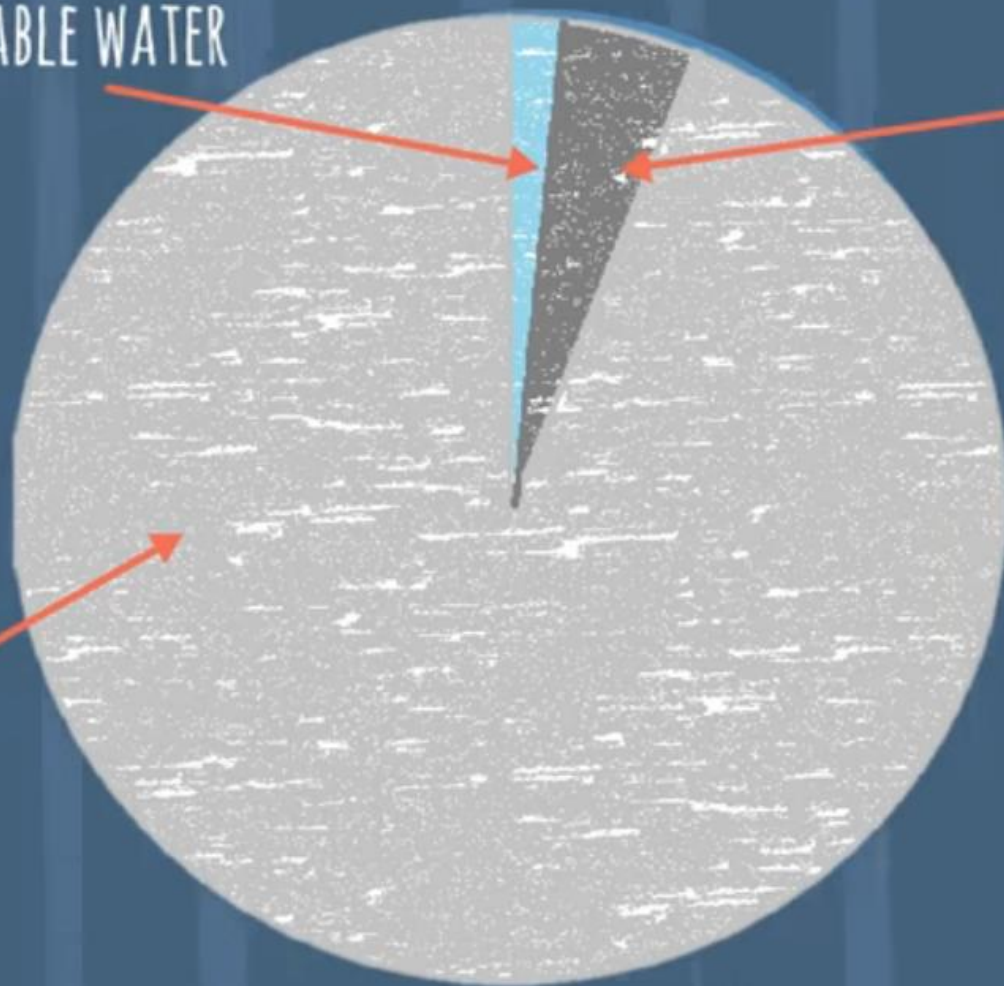
Water Pollution

- Involves contamination of various water bodies
- Aquatic life dependent on these water bodies
- Classification of water pollutants:
- Inorganic water pollutants
 - things found naturally but because of human production of goods have been altered to drastically increase the amount of them in the environment
 - Heavy metals: industry effluents
 - Industrial chemicals: petrochemical and refineries
 - Ink and dyes: printing, textiles, leather
 - Acids
 - Radioactive pollutants
- Organic water pollutants
 - biodegradable contaminants
 - sources of pollution are naturally found and caused by
- Thermal Pollutants
 - Heat: thermal power plants



1% FRESH, USABLE WATER

2% ICE



97% SALT WATER



Causes of Water Pollution

- Insecticides and Pesticides runoff into the ground water
- Washing clothes near lakes and river causes “ Eutrophication (causes inhabitable environment)
- Oil Spills
- Natural disasters like hurricanes , floods cause intermixing of water with harmful substances
- Offshore drilling for Oil reserves
- Sewage And Waste Water:
- Dumping
- Industrial Waste:
- Oil Pollution:
- Acid Rain
- Use of pesticides





Effects of
water pollution

Effects of Water Pollution

- Health Aspects
 - cholera, dysentery, diarrhoea, tuberculosis, jaundice, etc
- Threatens the survival of aquatic life
- Inorganic pollution poisons the water and passes through the food chain (metals)
- Global Warming
- Eutrophication
- Reduces amount of oxygen in water bodies leading to suffocation of aquatic life



Example of food chain

Little fishes eat tiny organic particles

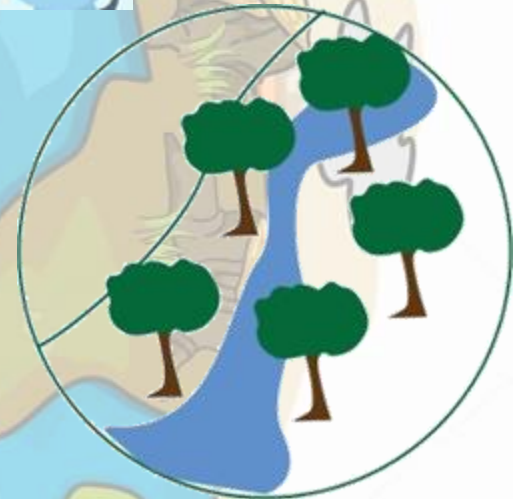
Big fishes eat tiny fishes

Humans also eat fish



Remedies For Water Pollution

- Do not throw waste into water
- Efficient treatment of as sewage before letting out into water
- Conserve water
- Reduce the amount of non-biodegradable waste used
- Trees should be planted along the sides of water bodies
- Prevent oil spills



Air Pollution

- Atmosphere (Air) protect the Earth and allow life to exist
- Occurs when gases, dust particles, fumes (or smoke) or odour are introduced into the atmosphere in a way that makes it harmful to humans, animals and plant
- Any additional gas, particles or odors that are introduced into the air (either by nature or human activity) to distort this natural balance and cause harm to living things can be called air pollution

Causes of Air Pollution

- Burning of Fossil Fuels
- Emission form Industries
- Vehicle Emissions
- Power Plants (burning of fossil fuels)
- Deforestation (sinks for carbon dioxide)
- Incineration of waste
- Volcanic Activity (releases tremendous amounts of sulfuric, chlorine, and ash products)
- Mining Operations (releases dust)
- Power generation

Each car on the road is adding pollutants to the air



Effects of Air Pollution

- **Eutrophication:**

- Condition in a water body where high concentrations of nutrients (such as nitrogen) stimulate blooms of algae, which in turn can cause fish kills and loss of plant and animal diversity
- Air emissions of nitrogen oxides from power plants, cars, trucks, and other sources contribute to the amount of nitrogen entering aquatic ecosystems.

- **Effects on Wildlife**

- **Ozone Depletion**

- **Acid rain**

- **Haze**

- caused when sunlight encounters tiny pollution particles in the air obscuring clarity

- **Climate Change (Global Warming)**

- **Greenhouse Effect**

- **Hazardous effects on human health**

chronic asthma, bronchitis

- **Facts:** In the great "Smog Disaster" in London in 1952, four thousand people died in a few days due to the high concentrations of pollution



Remedies for Air Pollution

- Using **public transport**
- Using **environmental friendly resources** for energy production
- **Planting trees**
- **Conserve energy**
- Opt for a fan instead of air conditioning
- **Recycle and reuse** paper, glass, metals and organic materials



Land Pollution

- Contamination or degradation of earth surface
- Deterioration (destruction) of the earth's land surfaces
- Often directly or indirectly as a result of human activities
- Misuse of land resources
- Deposition of solid or liquid waste materials on land or underground
- Contaminate the soil and groundwater



Causes of Land Pollution

- Landfills
- Use of chemical fertilizers
- Use of pesticides
- Improper waste disposal
- Oil spills inland
- Littering
- Deforestation: neither can replenish soils nor can help retain nutrients
- Mining activities (soil erosion in process of extraction (removal) of minerals and metals from earth)
- Industrialization and urbanization : generation of more wastes
- Construction activities
- Nuclear wastes dumped beneath earth's surface
- Overgrazing



Effects of Land Pollution

- Soil Pollution
- Deforestation disturbs rain cycle
- Adversely affects human health
- Disruption of ecosystems
- Affects soil fertility



Remedies of Land Pollution



- Sanitary Landfills
 - Far away from cities
 - Bacterial decomposition
- Crop rotation
- Afforestation
- Limiting use of fertilizers and pesticides
- Crop rotation improves the quality of soil
- Segregation of waste for purpose of recycling and reuse
- Switch to organic gardening (no use of pesticides)
- Proper disposition of industrial waste

Reduce

Re-use

Recycle

Compost

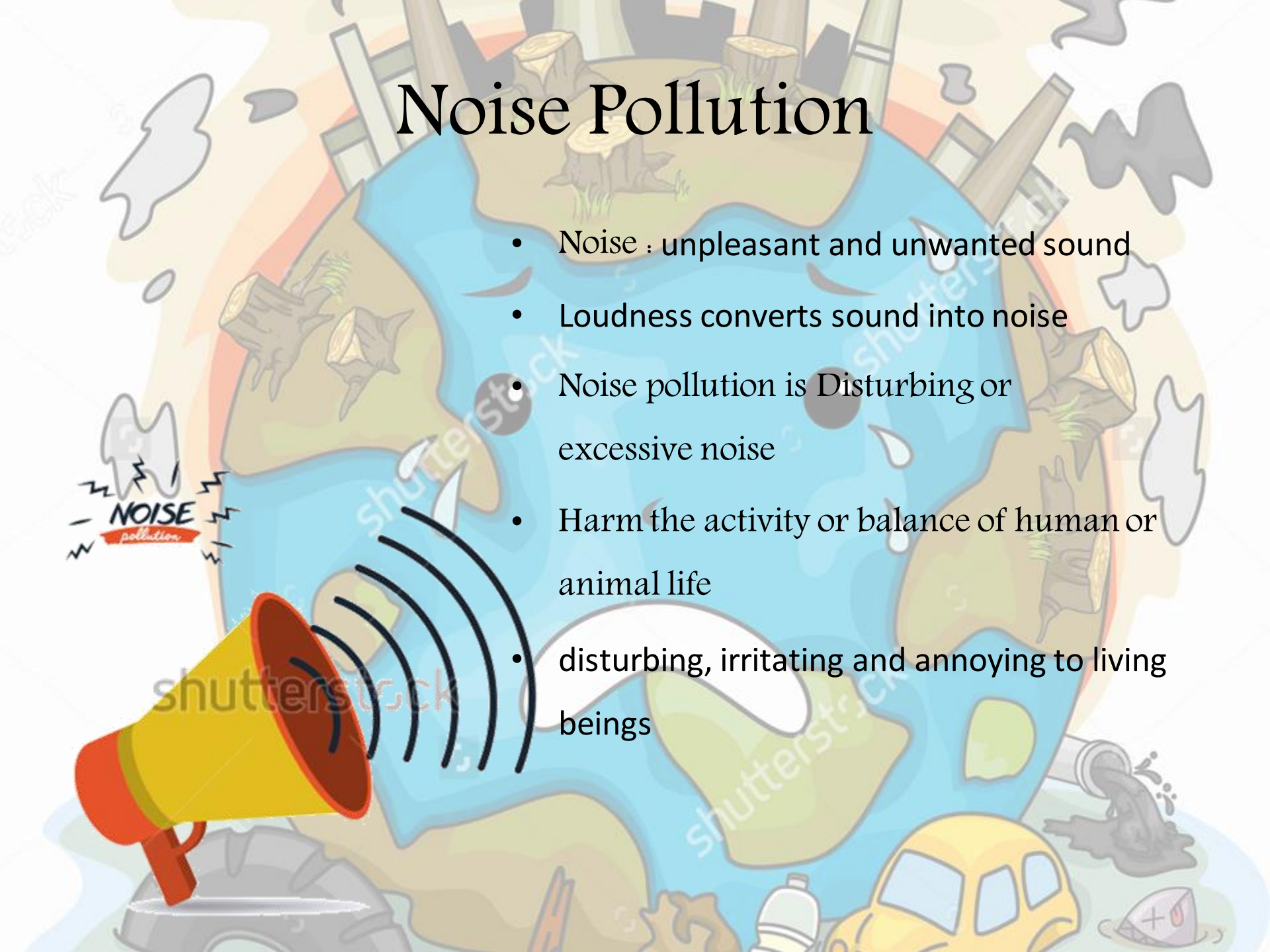


Noise Pollution

- Noise : unpleasant and unwanted sound
- Loudness converts sound into noise
- Noise pollution is Disturbing or excessive noise
- Harm the activity or balance of human or animal life
- disturbing, irritating and annoying to living beings



NOISE
pollution



Cause of Noise Pollution



- Industrialization
- Transportation
- Social Events
- Construction activities
- Household chores
- Agricultural machines
- Defense equipments

Effects of Noise Pollution

- **Physiological Effects.**

- Sleeping Disorders
- Hearing impairment
- Health Issues (psychological mainly)
 - Aggressive behavior, disturbance of sleep, constant stress, fatigue and hypertension
- Cardiovascular Issues:
 - Studies suggest that high intensity noise causes high blood pressure and increases heart beat rate as it disrupts the normal blood flow
- Trouble Communicating
- Headache by dilating blood vessels of the brain
- Increases heart beat rate
- Fluctuations in the arterial blood pressure by increasing the level of cholesterol in the blood.
- Decrease in heart output
- Pain in the heart
- Digestive spasms through anxiety and dilation of the pupil of the eye, thereby causing eye-strain.
- Impairment of night vision
- Lowering of concentration and affect on memory,
Muscular strain and nervous breakdown



Effects of Noise Pollution

- **Psychological Effect**

- Depression and fatigue which considerably reduces the efficiency of a person.
- Insomnia as a result of lack of undisturbed and refreshing sleep
- Straining of senses and annoyance as a result of slow but persistent noise from motorcycles, alarm clocks, call bells, telephone rings etc.
- Affecting of psychomotor performance of a person by a sudden loud sound
- Emotional disturbance



Level (in db)	Effects
up to 23	No disturbance
30—60	Stress, tension, psychological (illness, heart attack) effects especially at upper range.
60—90	Damage to health, psychological and vegetative (disturbance in stomach-gall function, pains in muscles, high blood pressure, disturbance in sleeping)
60—120	Damages to health and ontological (ear diseases) effects
Above 120	Painful effects in long run.



Remedies for Noise Pollution

- Turn off Appliances at Home and offices
- Use Earplugs
- Lower the volume
- Use Noise absorbents in noisy machineries
- Use Proper Lubrication and Better maintenance
- Noise-free electronic appliances
- Use of head phone for TV and Music

