

# Noise pollution

- Pollution of the environment with unpleasant and undesirable sound
- Noise is a pollutant which is harmful to humans and animals as any other pollutants



## Sources of noise pollution

- **Industries, factories and machinery**
- **Vehicles such as trains, buses, cars, scooters and their hooting of horns**
- **Loud speakers and audio systems used in celebrations and social gatherings**
- **Domestic appliances such as grinders, mixies, audio systems etc**
- **Various construction works**
- **Sirens from factories**



## Physiological response to noise and noise categories

Noise in living room - 40 decibels (dB)

Normal conversational speech – 50 dB

Inside cinema hall – 75-90 dB

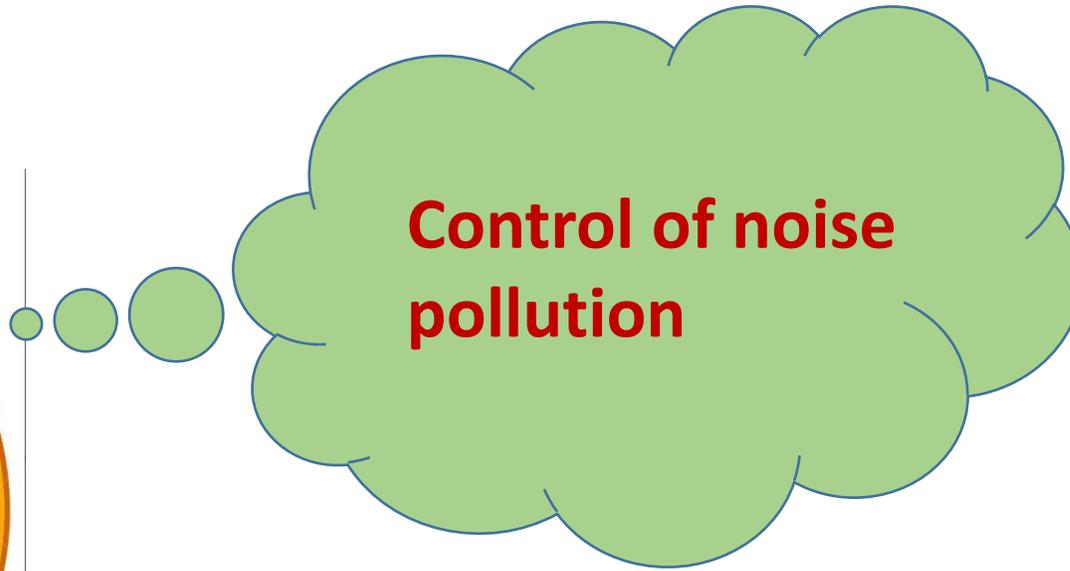
Mixie – 80 dB

Hoot of a train – 130 dB

**Noise level upto 70 dB is more or less harmless to humans and upto 85 dB, it is tolerable**

# **Adverse effects of noise pollution**

- 1. It induces hormonal imbalance**
- 2. It will damage ear drum**
- 3. May induce emotional disturbances**
- 4. Disturb sleep and cause fatigue**
- 5. It increases heart beats and raises blood pressure**
- 6. It aggravates gastric disorders and stomach ulcers**
- 7. It effect functioning of brain, kidney and liver**
- 8. Causes headache, nausea and fatigue**
- 9. It encourage addiction to sleeping pills and drugs**
- 10. At very high levels, it may kill a person inducing heart attack or cerebral haemorrhage**



Though noise pollution cannot be totally eliminated, it can be reduced and its effects can be minimized by taking some preventive or safety measures

1. Usage of ear protective aids in noisy factories
2. Walls of the factories must be insulated with sound absorbing materials
3. Old noisy factory machines should be replaced by new one
4. Noise creating operations should be performed in large open spaces
5. Vehicles producing high rattling sound should not be allowed on the road
6. Use of loud speakers in thickly populated areas should be prohibited
7. Use of air horns should be prohibited in cities, towns and near hospitals
8. Allow to grow trees around factories which will reduce the noise
9. Busy bus stations and railway stations should be away from heavily populated areas
10. In cities, the doors and windows should be designed properly using adequate sound proofing technique



# Thermal pollution

- Thermal pollution mainly refers to the undesirable effects arising due to the addition of heat to water bodies
- It is regarded as a kind of water pollution
- It makes life very difficult for fish and aquatic species

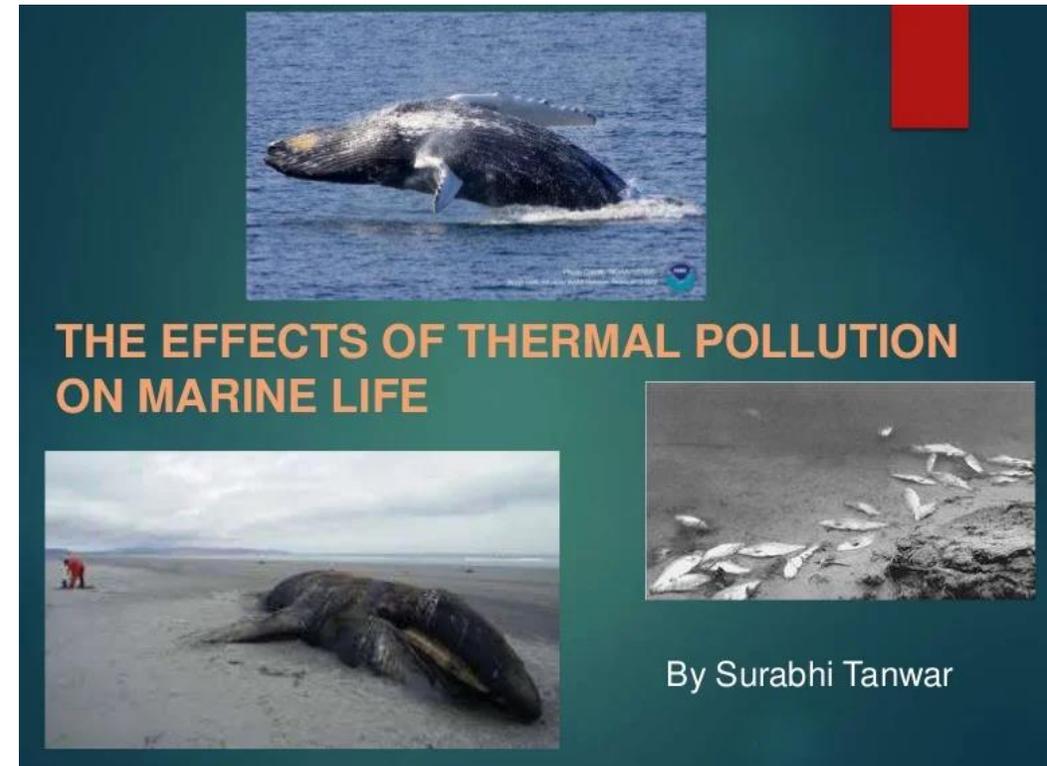


# Sources of thermal pollution

- Discharge of warm water from industrial source
- Discharge of condenser cooling water from electric power generating plants

# Harmful effects of thermal pollution

- Some rivers reach their temperatures as high as even 40 degree, in which survival of the fishes is impossible
- Causes depletion of dissolved oxygen
- It contribute to the global warming



# Control of thermal pollution

## 1. Cooling pond method

The warm water from the plant is allowed to flow into a large artificial pond. Evaporation takes the heat to the atmosphere, leaving behind cooler water.

## 2. Cooling tower method

The warm water from the plant is sprayed downwards over vertical sheets kept in a cooling tower. Heat exchange occurs between water and air and excess of heat is dissipated into atmosphere.

