



# **ENVIRONMENT POLLUTION AND CONTROL**

**By, ARJUN PRAMANIK.  
Assistant Professor ,  
Dept. of Mechanical engg.  
Netaji Subhas university , Jamshedpur.**

# ENVIRONMENTAL POLLUTION

- ❑ **Environmental Pollution** can be defined as any undesirable change in physical, chemical, or biological characteristics of any component of the environment i.e. air, water, soil which can cause harmful effects on various forms of life or property.
- ❑ **Pollution:** The term pollution can be defined as influence of any substance causing nuisance, harmful effects, and uneasiness to the organisms
- ❑ **Pollutant:-** Any substance causing Nuisance or harmful effects or uneasiness to the organisms, then that particular substance may be called as the pollutant.

# TYPES OF POLLUTION

▶ **WATER POLLUTION**

▶ **AIR POLLUTION**

▶ **AIR POLLUTION**

▶ **LAND POLLUTION**

▶ **LAND POLLUTION**

▶ **NOISE POLLUTION**

▶ **NOISE POLLUTION**

NSU

JAMSHEDPUR

ESTD

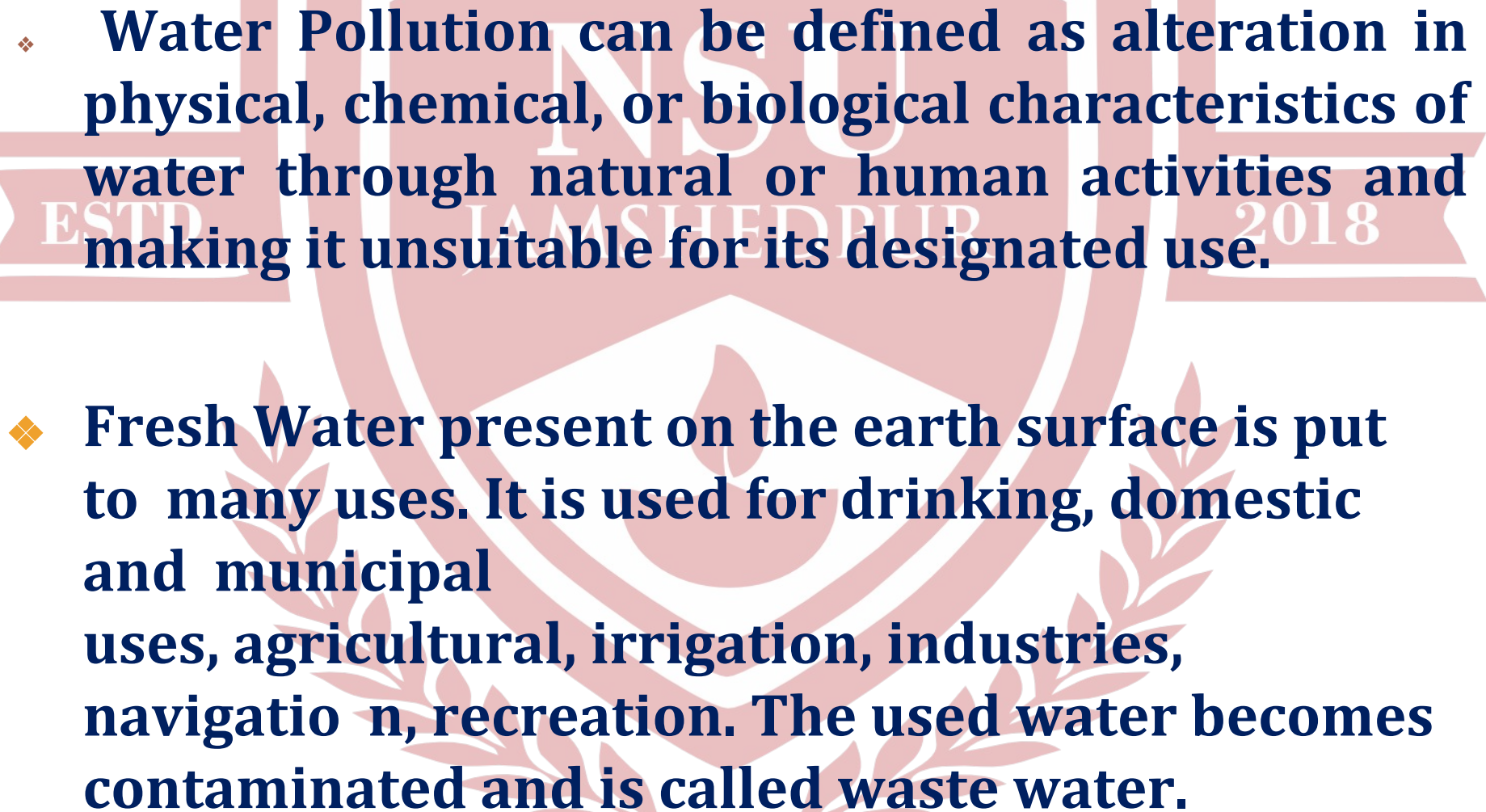
2018

# WATER POLLUTION

# POLLUTION

ES



- 
- The background features a large, semi-transparent watermark of the N.S.U. (Nizam's State University) logo. The logo is a shield-shaped emblem with a central lamp and a banner below it. The banner contains the text 'ESTD. 1958' and 'WAMSHEDDUR'. The year '2018' is also visible on the right side of the banner. The logo is rendered in a light red or pinkish hue.
- ❖ **Water Pollution can be defined as alteration in physical, chemical, or biological characteristics of water through natural or human activities and making it unsuitable for its designated use.**
  - ❖ **Fresh Water present on the earth surface is put to many uses. It is used for drinking, domestic and municipal uses, agricultural, irrigation, industries, navigation, recreation. The used water becomes contaminated and is called waste water.**

# **SOURCES OF WATER POLLUTION**

- ❑ **Most of Water Pollution is man made It may also occur naturally by addition of soil particles through erosion animal wastes and leaching of minerals from rocks**

- ❑ **The sources of water pollution can be classified as**

- ❑ **Municipal Waste Water**
- ❑ **Industrial Waste**
- ❑ **Inorganic Pollutants**
- ❑ **Organic Pollutants**
- ❑ **Agricultural Wastes**
- ❑ **Marine Pollution**
- ❑ **Thermal pollution**

ESTD

JAMSHEDPUR

2018

# MUNICIPAL WASTE WATER



# INDUSTRIAL WASTE WASTE

**The major source of water pollution is the waste water discharged from industries and commercial bodies, these industries are chemical, metallurgical, food processing industries, textile, paper industries. They discharge several organic and inorganic pollutants. That prove highly toxic to living beings.**



# INDUSTRIAL WASTE WASTE

ESTD

018



# INORGANIC POLLUTANTS

- They include fine particles of different metals, chlorides, sulphates, oxides of iron, cadmium, acids and alkalies.

ESTD

JAMSHEDPUR

2018



# ORGANIC POLLUTANTS

# POLLUTANTS

- They Include oils, fats, phenols, organic acids grease and several other organic compounds



# AGRICULTURAL WASTES

## WASTES

- Chemical fertilizers and pesticides have become essential for present day high yielding crops.
- Consequently, they have become a potential source of water pollution. These fertilizers contain major nutrients mainly nitrogen, phosphorous, and potassium.
- Excess fertilizers may reach the ground water by leaching or may be mixed with surface water of rivers, lakes and ponds by runoff and drainage.



# MARINE POLLUTION

# POLLUTION

- Ocean are the final sink of all natural and manmade pollutants. Rivers discharge their pollutants into the sea. The sewage and garbage of costal cities are also dumped into the sea. The other sources include, discharge of oils, grease, detergents, and radioactive wastes from ships.



# THERMAL POLLUTION

# POLLUTION

- Thermal Pollution of water is caused by the rise in temperature of water. The main source of thermal pollution are the thermal and nuclear power plants. The power generating plants use water as coolants and release hot water into the original source. Sudden rise in temperature kills fish and other aquatic animals.

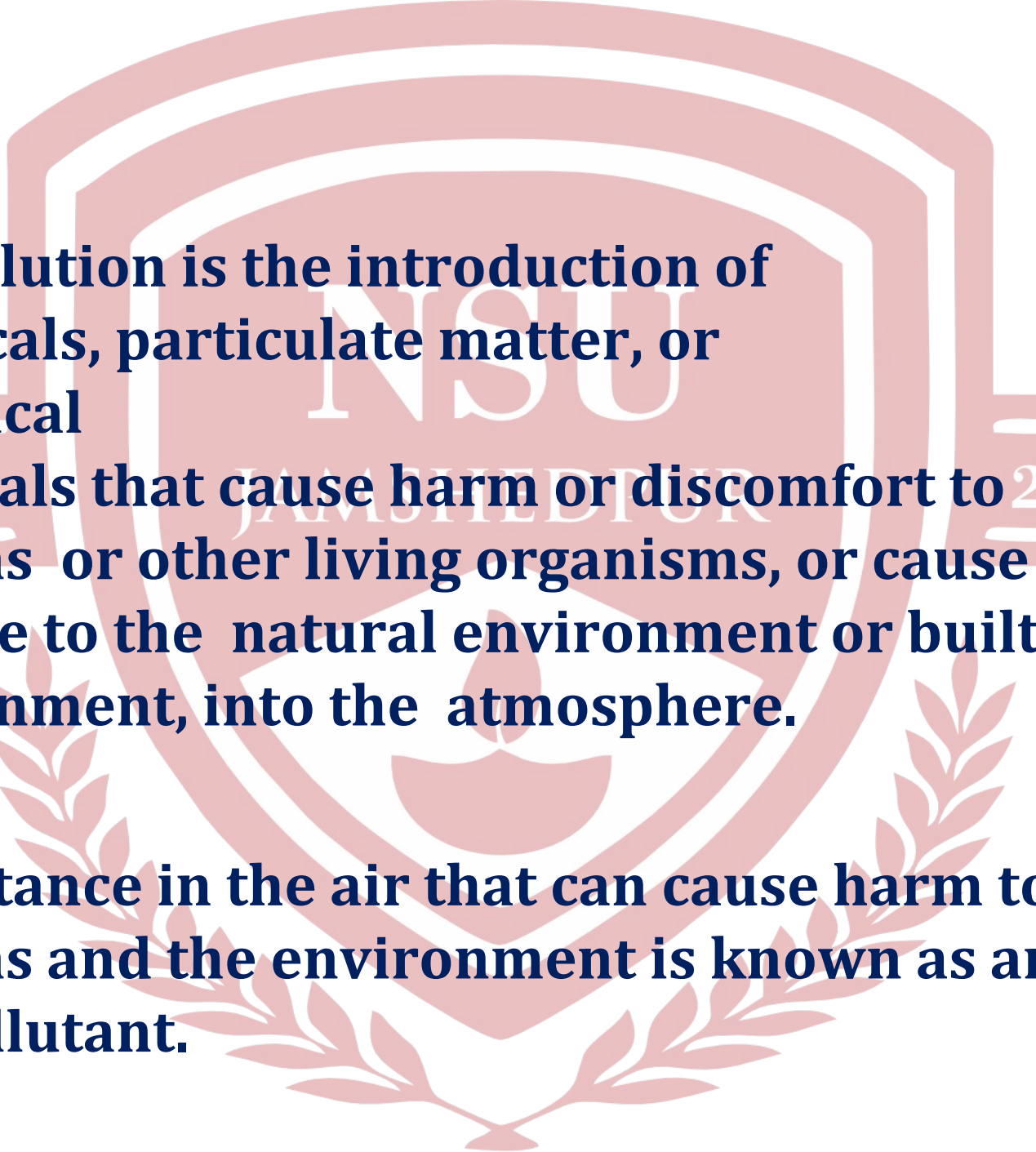


# AIR POLLUTION POLLUTION

ESTD

2018



The background features a large, semi-transparent watermark of the National Science University (NSU) logo. The logo is a shield-shaped emblem with a central lamp, surrounded by laurel branches. The letters 'NSU' are prominently displayed in the center of the shield. A banner on the right side of the shield contains the year '2018'.

◆ **Air pollution is the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or cause damage to the natural environment or built environment, into the atmosphere.**

◆ **A substance in the air that can cause harm to humans and the environment is known as an air pollutant.**



# CAUSES OF AIR POLLUTION

## POLLUTION

- ✓ **Carbon dioxide**-this happens because of Deforestation and fossil fuel burning.
- ✓ **Sulfur dioxide** -Due to the burning of sulfur containing compounds of fossil fuels.
- ✓ **Sulfur oxides**- very dangerous to humans at a high concentration. Sulfur in the atmosphere is responsible for acid rain.

# CONSEQUENCES OF AIR POLLUTION

- ▣ **CO<sub>2</sub> is a good transmitter of sunlight, but it also partially restricts infrared radiation going back from the earth into space, which produces the so-called greenhouse effect that prevents a drastic cooling of the Earth during the night.**
- ▣ **CO<sub>2</sub> in atmosphere --> GLOBAL WARMING**

# LAND POLLUTION

# POLLUTION

ES



© www.hickerphoto.com

- ❑ **Land pollution is the demolition of Earth's land surfaces often caused by human activities and their misuse of land resources. It occurs when waste is not disposed properly.**
- ❑ **Urbanization and industrialization are major causes of land pollution.**



# CAUSES OF LAND POLLUTION

❑ **Four Main causes of land pollution:**

- **Construction**
- **Agriculture**
- **Domestic waste**
- **Industrial Waste**

ESTD

NSU  
JAMSHEDPUR

2018

# CONSTRUCTION

- ❑ Buildings take up resources and land, the trees are chopped down and used to make buildings.
- ❑ Takes away the places for animals and other organisms to live.

2018



# AGRICULTURE

- As there are **E** more and more people inhabiting the earth, food is in higher demand and so forests are chopped down and turned into farmland
- In addition, herbicides, pesticides, artificial fertilizers, animal manure are washed into the soil



# DOMESTIC WASTE

- ❑ Tons of domestic waste is dumped every day. Some waste from homes, offices and industries can be recycled or burnt in incinerators .
- ❑ There is still a lot of garbage, such as refrigerators and washing machines that are dumped in landfills simply because they cannot be reused in anyway, nor recycled .





# INDUSTRIAL WASTE

## WASTE

- Plastics factories, chemical plants, oil refineries, nuclear waste disposal activity, large animal farms, coal-fired power plants, metals production factories and other heavy industry all contribute



ESTD

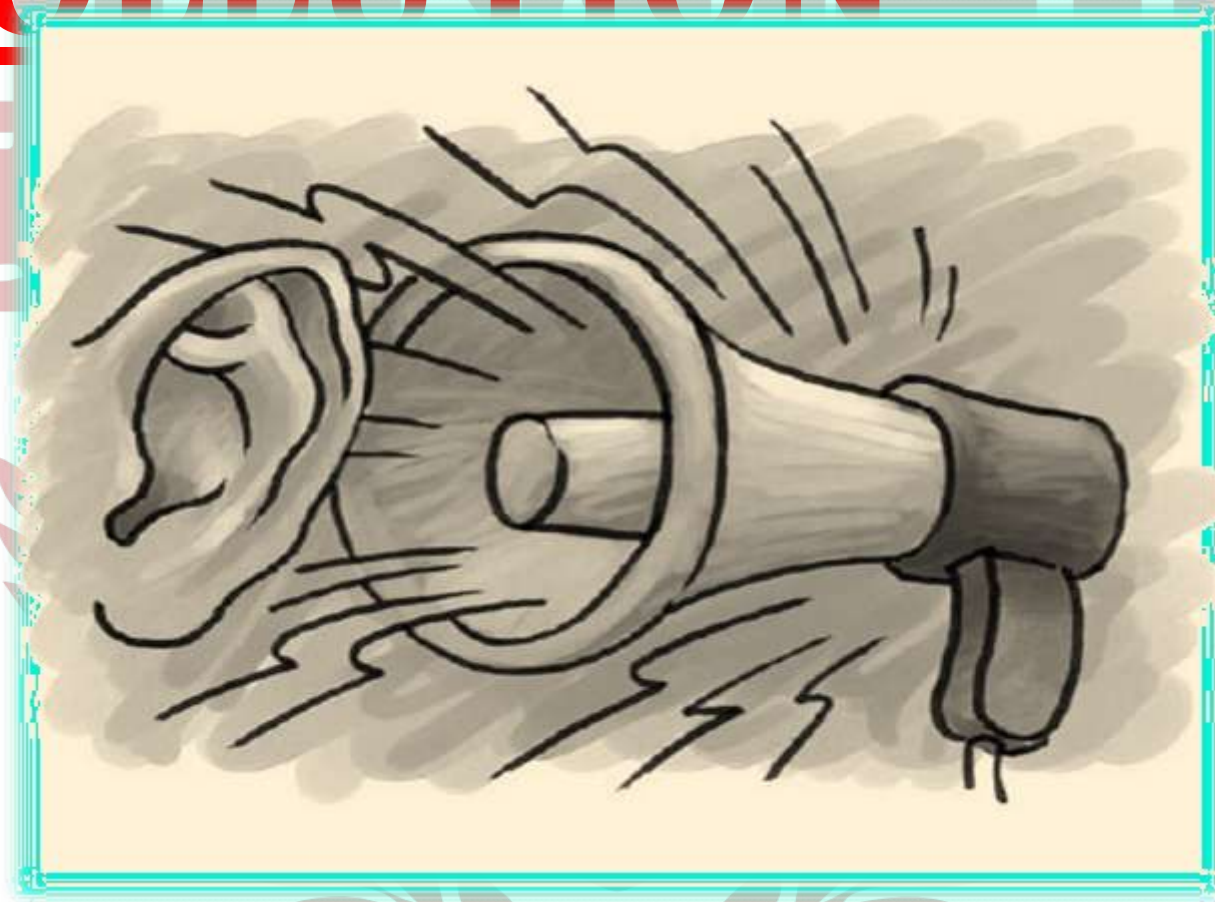
IAMSHEDPUR

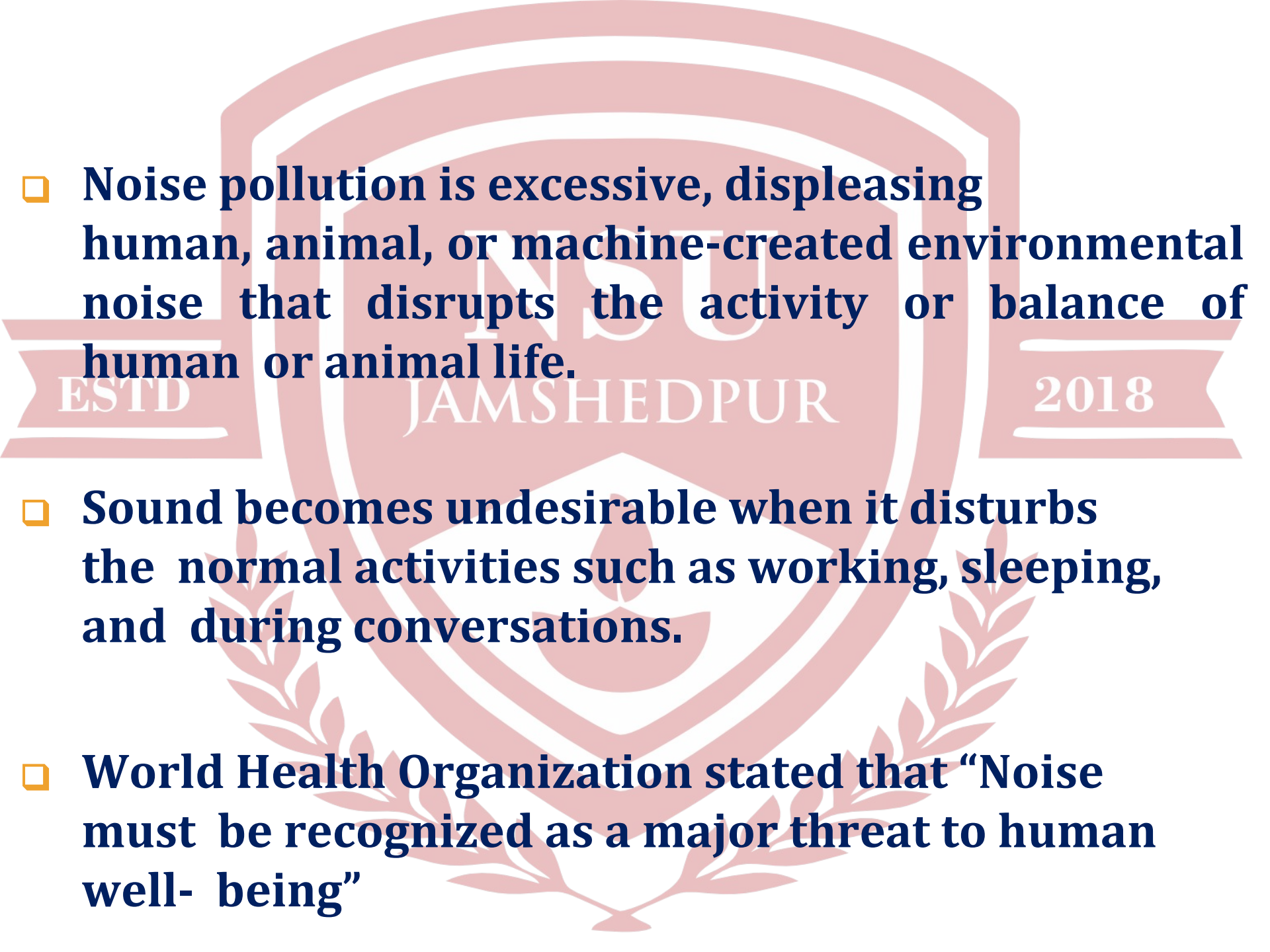
2018

# NOISE POLLUTION POLLUTION

ESTD

2018





**❑ Noise pollution is excessive, displeasing human, animal, or machine-created environmental noise that disrupts the activity or balance of human or animal life.**

**❑ Sound becomes undesirable when it disturbs the normal activities such as working, sleeping, and during conversations.**

**❑ World Health Organization stated that “Noise must be recognized as a major threat to human well- being”**

# SOURCES OF NOISE POLLUTION

## POLLUTION

- ❑ **Transportation systems** are the main source of noise pollution in urban areas.
- ❑ **Construction of buildings, highways, and streets** cause a lot of noise, due to the usage of air compressors, bulldozers, loaders, dump trucks, and pavement breakers.
- ❑ **Industrial noise** also adds to the already unfavorable state of noise pollution.
- ❑ **Loud speakers, plumbing, boilers, generators, air conditioners, fans, and vacuum cleaners** add to the existing noise pollution.

# **EFFECTS OF NOISE** POLLUTION

## **POLLUTION**

- According to the USEPA, there are direct links between noise and health. Also, noise pollution adversely affects the lives of millions of people.

ESTD

JAMSHEDPUR

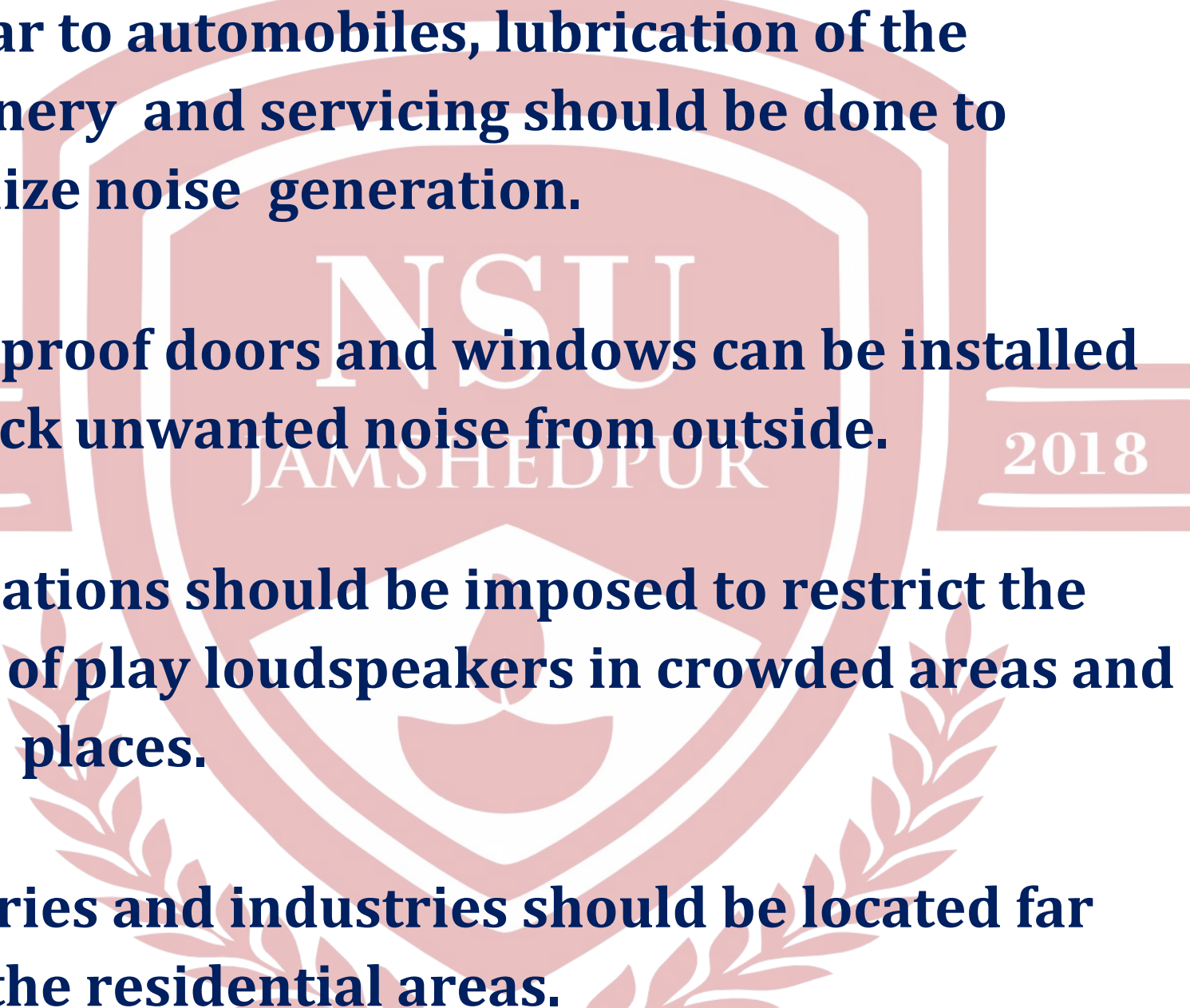
2018

- Noise pollution can damage physiological and psychological health.
- High blood pressure, stress related illness, sleep disruption, hearing loss, and productivity loss are the problems related to noise pollution.
- It can also cause memory loss, severe depression, and panic attacks.

# **SOLUTIONS FOR NOISE POLLUTION**

## **POLLUTION**

- ❑ **Planting bushes and trees in and around sound generating sources is an effective solution for noise pollution.**
- ❑ **Regular servicing and tuning of automobiles can effectively reduce the noise pollution**
- ❑ **Social awareness programs should be taken up to educate the public about the causes and effects of noise pollution.**
- ❑ **Workers should be provided with equipments such as ear plugs and earmuffs for hearing protection.**

- 
- ❑ **Similar to automobiles, lubrication of the machinery and servicing should be done to minimize noise generation.**
  - ❑ **Soundproof doors and windows can be installed to block unwanted noise from outside.**
  - ❑ **Regulations should be imposed to restrict the usage of play loudspeakers in crowded areas and public places.**
  - ❑ **Factories and industries should be located far from the residential areas.**

# WAYS TO STOP POLLUTION

## POLLUTION

- ❑ We believe that it is the responsible thing to do to increase recycling.

ESTD

JAMSHEDPUR

2018

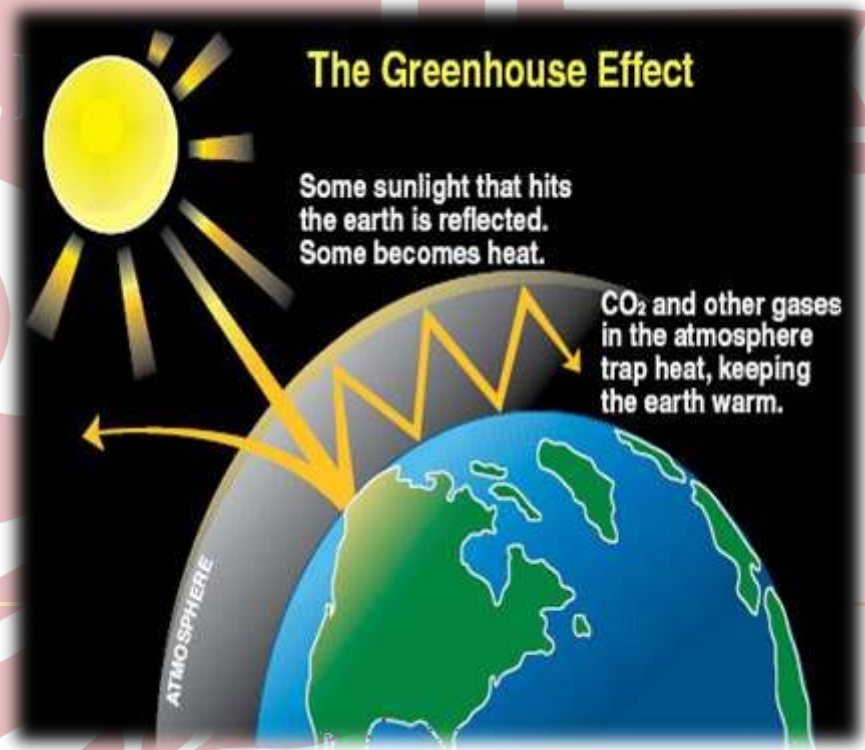
- ❑ It is just like doing laundry and separating blacks and colors.
- ❑ The residents of the country should also try and do their part and put in at least one day of litter picking up.



# GLOBAL WARMING AND THE GREENHOUSE EFFECT



**Global Warming**



**Greenhouse Effect**

# DIFFERENCE BETWEEN GLOBAL

## WARMING AND THE GREENHOUSE

### GREENHOUSE EFFECT

- ▶ **Global warming refers to a rise in the temperature of the surface of the earth.**
- ▶ **The Greenhouse Effect is a process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gases, and is re-radiated in all directions.**

# SOME PROOF OF GLOBAL WARMING

**PORTAGE GLACIER  
ALASKA  
THEN....**



**1914**

**PORTAGE GLACIER  
ALASKA  
NOW....**



**2004**

**COLORADO RIVER,  
AS OF JUNE  
2002**



**COLORADO RIVER,  
AS OF DECEMBER  
2003**





NSU

JAMSHEDPUR

ESTD

2018

**THANK**

**YOU**