



Al-Mustaqbal University

College of Science

Department of Medical physics

3th stage\ 2024-2025

Environmental Pollution

۲nd Lecture

Kinds of Pollution

Water pollution

Water pollution can be defined as the contamination of a stream, river, lake, ocean or any other stretch of water, depleting water quality and making it toxic for the environment and humans. There are two types of water pollution, which Organic pollution due to microorganisms - bacteria and viruses - present in the water, generated by excrement, animal and vegetable waste, and, Chemical pollution generated by the nitrates and phosphates of pesticides, human and animal drugs, household products, heavy metals, acids and hydrocarbons used in industries.



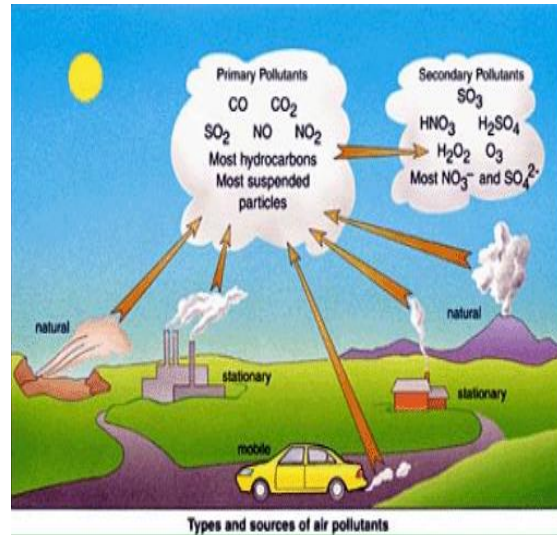
Soil pollution

It is the presence of toxic chemicals (pollutants or contaminants) in soil in high enough concentrations to be of risk to human health and/or ecosystem. Additionally, even when the levels of contaminants in soil are not of risk, soil pollution may occur simply due to the fact that the levels of the contaminants in soil exceed the levels that are naturally present in soil (in the case of contaminants which occur naturally in soil). The main sources of soil pollution are Mining, agriculture, and deforestation are important energy intensive activities that impact economies and at the same time directly and indirectly cause soil and land pollution. Soil pollutants include a large variety of contaminants or chemicals (organic and inorganic).



Air pollution

Air pollution is a serious threat to human health around the world. According to the environmental assessment issued by the United Nations Environment Program (UNEP), about 900 million urban residents, most of them in developing countries, are exposed to unhealthy levels of carbon dioxide.



Noise pollution

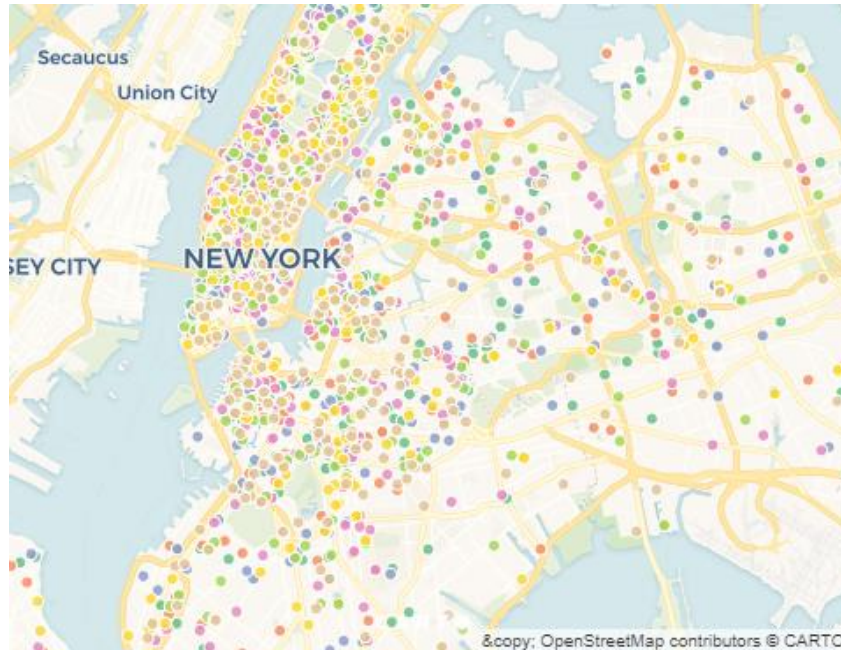
Noise or noise pollution includes road noise, aircraft noise, industrial noise and sonar noise, and is considered one of the types of dangerous pollution, especially in major cities where it leads to fatigue, stress and sleep disorders, so the cholesterol level in the blood increases, the pupil expands, and the endocrine work is disturbed. The Nazis and the Zionists used noise pollution on their prisoners so that they could not sleep, causing them psychological and nervous breakdowns, and this is one of the methods of brainwashing.

Noise pollution damages

Noise causes a lot of damage to a person, including what is psychological, nervous, physiological, etc. Examples include:

- Permanent hearing damage.
- The occurrence of mental disorders in the form of anxiety and confusion.
- Physiological disorders as a result of the psychological state, such as headache.

- The human productivity decreases, so it is scientifically proven that noise causes about 50% of mechanical errors, which is equivalent to 20% of occupational accidents.



A map of noise complaint near highway or bridges

Thermal pollution

Thermal pollution means the change in temperature of natural water bodies as a result of human activity, such as the use of water for cooling in power stations.



Optical pollution

The term visual pollution refers to any scene where a person feels annoyed and uncomfortable when his eyes fall on him.



Sources of pollution

Based on its source, pollution is divided into two types: natural pollution and industrial pollution:

Natural pollution

It is pollution whose source is due to natural phenomena that occur from time to time, such as volcanoes, thunderbolts, and storms that may carry huge amounts of sand and dust, and destroy crops and crops. So natural pollution is its sources of natural origin, and there is no income for man in it, and then it is difficult to monitor this Pollution or its prediction and control completely, and this pollution has existed since ancient times without constituting a disturbing phenomenon to humans.



Industrial pollution

Industrial pollution results from human action and activity, and finds its source in man's industrial, service, and recreational activities, etc., and in its increasing uses of modern technology manifestations and its various innovations. It goes without saying that industrial activities are fully responsible for the emergence of the pollution problem in our time, and reaching this dangerous degree that threatens life and human survival on the surface of the earth, and among the most important sources of industrial pollution: industrial and commercial waste and what is emitted by car exhaust, and factory chimneys that leave toxic CFCs, and others.

The severity of industrial pollution depends on several factors, including:

- The area from which industrial pollutants are emitted or discharged.
- Pollution time period.
- The degree of concentration of pollutants.
- Physical, chemical and biological properties of pollutants.
- Decomposition and assimilation in the environmental environment in which it is placed.
- The degree of toxicity in relation to humans and other organisms.

Industrial pollutants are divided into three types:

1. Solid pollutants, which are pollutants resulting from many industries, such as dust, caused by the cement industry, for example.
2. Liquid pollutants such as chemical solutions that are thrown by factories in waterways.
3. Gas pollutants such as gases and harmful smoke from industrial chimneys and oil refineries.

