

Climatology

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Global warming

- Global warming refers to continuing rise in the average temperature of Earth's climate system. Since the early 20th century, the global and sea surface temperature has increased about 0.8°C.
- Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850.
- Emission of greenhouse gases grew 2.2% per year between 2000 and 2010, compared with 1.3% per year from 1970 to 2000.

- Global warming is called the greenhouse effect because the gases that are gathering above the earth make the planet comparable to a greenhouse.
- By trapping heat near the surface of the earth, greenhouse effect is warming the planet and threatening the environment.

Causes of global warming

- Carbon dioxide emissions from fossil fuel burning power plants
- Carbon dioxide emissions from burning gasoline for transportation
- Methane emissions from animal waste, agriculture such as rice paddies
- Deforestation

Causes of greenhouse gases

Deforestation

Cutting down of trees, thus, leads to an increase in the carbon dioxide level in the atmosphere, eventually enhancing the greenhouse effect

Burning of fossil fuels

Greenhouse gases can also be released into the atmosphere due to burning of fuels, oil, coal and gas.

Population growth

With increase in population, the needs and wants of people increase that consequently increase deforestation, manufacturing and industry processes.

Greenhouse gases

- Water vapors
- Carbon dioxide
- Methane
- Nitrous oxide
- Chlorofluorocarbons (CFCs)

- **Weather:** Weather is the condition of the atmosphere at a given place or time. It is very dynamic as it may change several times even in a day.
- **Season:** Average weather conditions, showing uniformly over a period of few months may be described as a season.
- **Climate:** Climate is the average weather condition or atmospheric conditions of an area over a considerable period. Thus, the climate is the same over large areas and it does not change often.

Climate change

- Climate change is a change in the statistical distribution of weather over periods of time that range from decades to millions of years. It can be a change in the average weather or a change in the distribution of weather events around an average.
- Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions or in the distribution of weather around the average condition

Causes of climate change

- Increase greenhouse gases (emission from burning fossil fuels- coal, oil and gas)
- Deforestation
- Increasing population (More people more CO₂)
- The wetlands release methane, a greenhouse gas

Effects of climate change

- Migrating birds are forced to change their time and place of migration
- Melting of glaciers will lead to higher sea level, which cause floods and put many low elevation regions at risk of disappearing under water
- New and widespread diseases because of warm climate
- Droughts, heat waves, extreme winter and storms