

Global Warming Basics

Source: David Suzuki Foundation

http://www.davidsuzuki.org/Climate_Change/Science/Greenhouse_Gases.asp

Science

The pollutants we pump into our atmosphere are changing its composition and preventing heat from escaping the earth's surface. Today's atmosphere contains 32 per cent more carbon dioxide, one of the main greenhouse gases, than at the start of the industrial era.

The result is climate change: altered long-term weather patterns. Global warming, a rise in the average global temperature, is one measure of climate change. And it has already begun - global average temperature has risen by almost 1 degree Celsius since 1900, and the northern hemisphere is substantially warmer than at any point during the past 1000 years.

Burning fossil fuels such as coal, oil and gas is largely responsible for climate change. Deforestation and modern intensive farming methods also contribute to the problem.

Science: Greenhouse Gases

Much like the glass of a greenhouse, gases in our atmosphere sustain life on earth by trapping the sun's heat. These gases allow the sun's rays to pass through and warm the earth, but prevent this warmth from escaping our atmosphere into space. Without naturally-occurring, heat-trapping gases - mainly water vapour, carbon dioxide and methane - Earth would be too cold to sustain life as we know it.



The danger lies in the rapid increase of carbon dioxide and other greenhouse gases that intensify this natural greenhouse effect. For thousands of years, the global carbon supply was essentially stable as natural processes removed as much carbon as they released. Modern human activity - burning fossil fuels, deforestation, intensive agriculture - has added huge quantities of carbon dioxide and other greenhouse gases.

Like the glass of a greenhouse, some gases trap heat in the earth's atmosphere. Today's atmosphere contains 32 per cent more carbon dioxide than it did at the start of the industrial era. Levels of methane and carbon dioxide are the highest they have been in nearly half a million years.

The Kyoto Protocol covers six greenhouse gases - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. Of these six gases, three are of primary concern because they are closely associated to human activities.

- **Carbon dioxide** is the main contributor to climate change, especially through the burning of fossil fuels.
- **Methane** is produced naturally when vegetation is burned, digested or rotted without the presence of oxygen. Large amounts of methane are released by cattle farming, waste dumps, rice farming and the production of oil and gas.
- **Nitrous oxide**, released by chemical fertilizers and burning fossil fuels, has a global warming potential 310 times that of carbon dioxide