



ENVIRONMENT ISSUES: Global Warming and Climate Change

Our world does not have one 'single climate' but five main 'groups' of climate - each in different regions of the world. Cold, cold moderate, warm moderate, dry, and tropical.

Changing weather patterns

Changes to these climates occur through changing weather patterns, changes in the atmosphere or in the Earth's surface (volcanoes, oceans, ice banks), but most scientists say these are especially caused by human activity.

There have been many changes to weather over the centuries but the term 'climate change' used today describes the current climate crisis we are facing.

The Greenhouse Effect

There are gases in the atmosphere surrounding our planet and these trap the Sun's heat and keep it warm – like a greenhouse keeps plants warm. The main greenhouse gases are water vapour, carbon dioxide, methane and nitrous oxide. Without these gases our world would be much colder.

- Methane is produced by growing certain crops like rice, through raising cattle, and especially by rotting waste in landfills.
- Carbon dioxide is produced through burning fossil fuel (gas, coal or oil). Our forests take in and use carbon dioxide and give out oxygen.

Enhanced Greenhouse Effect

If the balance of these gases changes (i.e. more carbon dioxide is produced) more heat is trapped in the atmosphere and the Earth gets warmer. This is called the Enhanced Greenhouse Effect and contributes to global warming.

Global warming

Some causes of global warming are natural (e.g. changes in Earth's orbit, volcanic activity) but many scientists believe that human activity is worsening the problem. Population increase and technological development, particularly since the Industrial Revolution, has led to greater demand on our planet's resources and the need to:

- generate power through burning fossil fuels
- grow more food
- chop down forests for building space
- build more homes, offices, factories and schools
- create more waste and landfill sites
- produce more cars, trains, boats and planes for transport, each using more oil and petrol.



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**ENVIRONMENT ISSUES: Global Warming and Climate Change** cont'd**Impacts of climate change**

Globally there are dramatic effects in different areas:

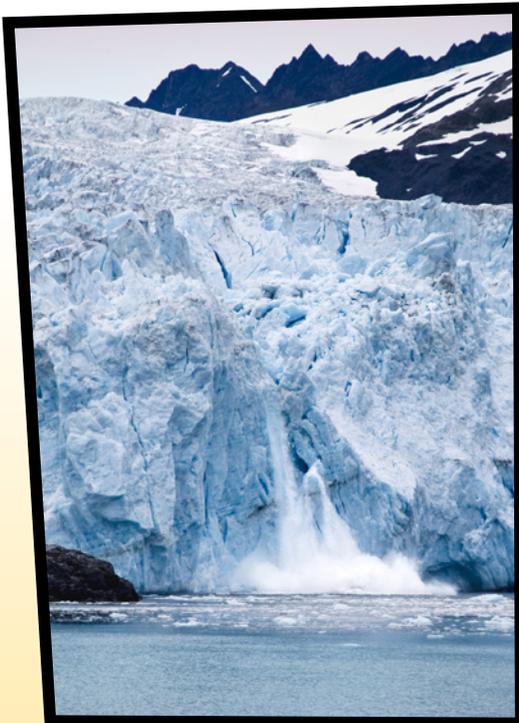
- extreme weather such as hurricanes and storms
- increased rainfall and flooding
- rise in sea levels and coastal areas lost under water
- droughts and water shortages
- loss of habitats, and therefore a decrease in biodiversity

What is being done?

Globally: Since the adoption of the Kyoto Protocol in 1997, world governments are trying to limit or reduce the production of greenhouse gases.

Locally: There are schemes to encourage us to live more sustainable lives by reducing our energy use, using cars less and public transport more. Initiatives such as Team Green Britain, in line with the London 2012 Olympics, are designed to engage people in doing 'their part.'

Individually: We can all do something, including reduce, repair, reuse and recycle, all of which cuts down on energy waste and energy consumption (see fact sheets under Reduce, Reuse, Recycle).

**Did you know?**

- The Earth's temperature has risen 0.74 degrees Celsius since 1906 and will continue to rise. Scientists warn a rise of just 2 degrees Celsius could have devastating effects.
- Individuals are responsible for roughly 40% of UK carbon emissions.