

1°-2° average annual rise in global temperatures is enough to cause serious climate changes.

In less than 100 years (the period of high population and industrial development) the annual average temperature has risen 0.6° - 0.8° already.

**This is already causing:**

1. **On-going droughts** (or reduced annual rainfall) in some areas, eg Victoria in 9 out of the last 10 years). Many parts of the world are facing water shortage.

2. **Heavier rainfall** elsewhere with consequent flooding, landslides, etc.

3. **Extreme weather events** – more damaging storms, cyclones, tornadoes etc.

4. **Species loss.** Most animals and plants need a specific climate range to survive. With the present rate of climate change, estimates suggest that 100,000 species will become extinct by the end of this century or earlier.

5. Less than 1° average annual rise in temperature is enough to cause **melting of much of the earth's ice.**

Glaciers in most parts of the world are melting and receding.

Re-freezing of these areas the following winter is not occurring. The Greenland ice sheet and parts of the Antarctic are melting.

6. This, along with greater ocean temperatures means **sea-level rise**, threatening low-lying coastal areas throughout the world.

**IF WE TAKE NO ACTION  
OR  
INADEQUATE ACTION  
OR  
FAIL TO RESPOND IMMEDIATELY  
OUR FUTURE IS UNDER  
SERIOUS THREAT.**

**THIS IS SOMETHING TECHNOLOGY  
CAN HELP TO SOLVE, BUT ONLY IF  
WE START ACTING NOW.**

**SOME CONSEQUENCES ARE  
ALREADY IMPOSSIBLE TO  
REVERSE UNDER SOME 100'S OF  
YEARS.**

**SO WHAT CAN WE DO?**

**For some answers:  
See Climate Change  
Pamphlet No. 2**

Source: Inter-Governmental Panel on Climate Change.

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**What  
is**

**Climate  
Change?**

**Climate Change Pamphlet No. 1**

The changing climate that is already happening around the world is serious, and it's a change for the worse.

The earth's climate has changed from time to time over the life of the planet, from too hot to too cold (ice ages). But these changes have happened slowly over 1000's of years.

The present and near future changes in our climate are happening very quickly, and the consensus among scientists is that these changes are not due to natural causes, but are human-induced. That is, our actions and way of life are causing them.

Average annual temperatures in the Arctic have already risen 5° C in the last 100 years, and the polar ice cap is retreating at about 9% per decade. Sea level rise and the failure of the Gulf Stream are potentially critical outcomes.

Scientists predict that Australia (the worst greenhouse polluter per capita on the planet) is also among the most vulnerable countries on earth to potential climate change impacts.

## What are the agreed causes?

(wide scientific consensus)

1. **The enormous growth in human population.** This is the biggest cause 100 years ago the world's population was around 2 billion. Today it is 7 billion, and increasing at the rate of 80 million people per year.

2. **A huge growth in use of the earth's resources and of energy** has followed.

The biggest driver of climate change is our use of **fossil fuels**, especially coal-fired power stations and petroleum for driving cars and trucks.

### **Other contributors are:-**

Industrial waste gases

Farm animals (methane producers)

Land clearing (forest & other vegetation removal)

Cropping & irrigation

Industrial gases include nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride, as well as carbon dioxide.

Nature itself produces greenhouse gases which include carbon dioxide, water vapour and methane.

## How does this cause climate change?

1. **Burning fossil fuels**, along with other causes, releases carbon dioxide (and other gases) into the atmosphere.

2. This extra **carbon dioxide forms a blanket** in the upper atmosphere, trapping heat which otherwise would escape.

3. This causes **global warming**, i.e. increases the earth's temperature.

4. **Temperature drives our climate** (high pressure and low pressure systems, moisture retention and precipitation, evaporation, winds and storms). Higher temperatures will cause dangerous climate changes.

So:

