

## Topic 2 – Has Climate Changed Over the Last 50 Years?

The answer to this question is an unequivocal yes. Figure 9 shows global average temperature since 1850. The dots are temperature for individual years, the black line, the ten-year running average of temperature, and the blue band, the uncertainty around that average. Temperature change is the difference between the observed temperature and the average temperature for 1961-1990.

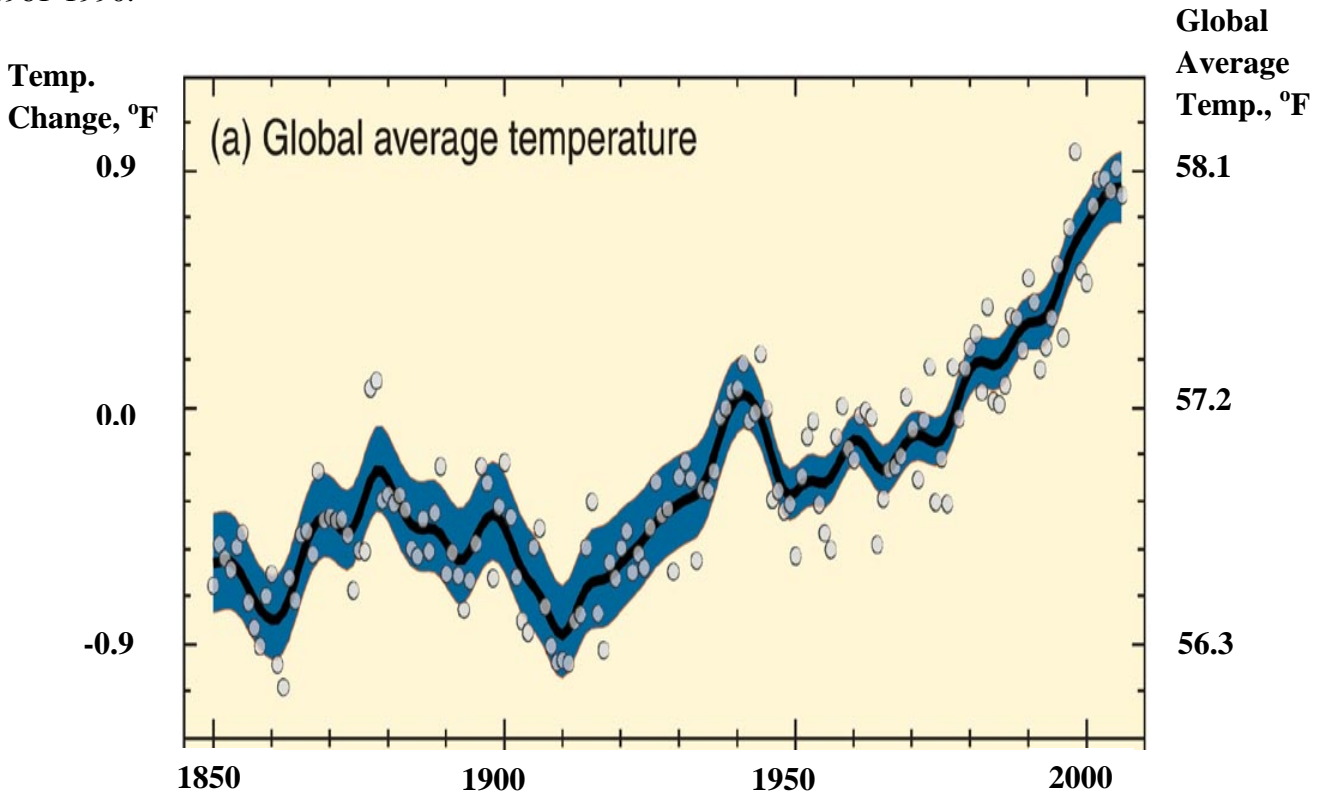


Figure 9 – Global Average Temperature, 1850 – 2005  
(Temperature change compared to 1961-1990 average)

Source: *Intergovernmental Panel on Climate Change Fourth Assessment Report*, [www.ipcc.ch](http://www.ipcc.ch)

Figure 9 clearly shows that global average temperature has risen since 1960, and that the rise has been continuous since about 1975. This does not mean that temperature has risen at every point on the globe, nor does it prove that human activities are the cause of the temperature rise. Whether humans have caused the observed change in climate is discussed in the next section.

Many questions have been raised about the calculation of global average temperature, and no doubt there are uncertainties in this calculation. However, studies of physical phenomena, such as the date of break-up of ice on lakes and rivers in the spring, and biological phenomena, such

as the date of first flowering of plants, all show a pattern consistent with warming of the Earth for at least the last 50 years.