

**Durham Miners Heritage Group  
Information and Activities Package**

# **Teaching Notes**

## **Global Warming and Climate Change**

A problem with the use of so called fossil fuels such as coal, oil and 'natural gas' as fuels *per se* is the rate of addition of 'greenhouse gasses' into the atmosphere. There are no serious and ingenuous scientists who do not currently believe this to be changing the global climate in a dramatic and potentially catastrophic way.

This problem has been long recognised, being first pointed out by the Nobel Prize winning chemist Svante Arrhenius in the 1880s. We also know what the probable consequences could be. Around 250 million years ago a similar accumulation of carbon dioxide in our atmosphere occurred when the huge volcanic eruptions which created what is today the Siberian plateau resulted in the extinction of approximately 95% of the species then alive on Earth.

However, there is a difference between what happened then and what is happening now. The

events of 250 million years ago were spread over 80,000 years. The man-made climate changes we are now witnessing are occurring somewhere in the order of 200 times faster than the events which led to the disappearance of more than 19 out of 20 species in the mass extinction that geologists and evolutionary biologists refer to as the 'Permo-Triassic event'. During the course of the approximately 800 centuries over which those extinctions took place, many of the plants and animals that survived had had time to evolve adaptations to the changes in climate.

It would be most imprudent to continue using fossil fuels such as coal and oil as fuels at the rate that we are currently.

However, the value of coal and of coal products as synthetic raw materials for the manufacture of plastics, fabrics, detergents, dyes, medicines, *etc.* is undeniable. Coal and oil will be mined for the foreseeable future.