

Northern pollution may affect southern rainfall

Researchers from the Centre for Australian Weather and Climate Research (CAWCR) – a collaboration between the Bureau of Meteorology and CSIRO – have found that pollution from Asia, Europe, and North America may have contributed to recent Australian rainfall changes.

Using a CSIRO climate model that takes into account the effect of atmospheric aerosols, the scientists found that aerosol build-up in the northern hemisphere – the main source of global aerosols – could drive changes in atmospheric and oceanic circulation in the southern hemisphere.

The most pronounced impact was increased rainfall in north-western and central Australia, and decreased rainfall in parts of southern Australia.

Aerosols come from many different sources. Sulphur is released from burning coal and oil. Dust is another aerosol that builds up when land is cleared, burned or overgrazed. Some aerosols, such as sea spray and volcanic emissions, occur naturally. However, NASA estimates 10 per cent of the total aerosols in the atmosphere are caused by people – and most of this 10 per cent is in the northern hemisphere.

European researchers are developing a new forecasting service that will accurately pinpoint where these aerosols come from and where they go.

The new service will give global information on how pollutants move around the world across oceans and continents, and will refine estimates of their sources and sinks.

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