

Rising methane 'due to mining and wetlands'

A rise in atmospheric methane emissions after 2006 is likely due to expanding wetlands and an increase in emissions from mining of fossil fuels, say an international team of researchers, in the advance online edition of *Nature Geoscience*.



Credit: Bureau of Land Management USA

'We think that the two reasons – fossil fuels and methane from wetlands – are the best explanations given the data,' says Australian author Dr Pep Canadell, from CSIRO Marine and Atmospheric Research.

Methane is a powerful greenhouse gas that is 10 times more potent than CO₂. Scientists estimate it is responsible for 20 per cent of recent global warming.

Canadell says while atmospheric concentrations of most greenhouse gases have been increasing exponentially since the beginning of the industrial revolution, something quite puzzling has been happening with methane.

Levels stabilised in the early 2000s and scientists suspected this was due to better management of wetland rice crops (which produce methane from anaerobic decomposition), and better management of fugitive emissions from mining coal and other fossil fuels.

However, despite these initiatives, after 2006 methane emissions began to rise again.

Canadell and colleagues now think they know why. They [developed a model](#) based on currently available data, which estimates the contribution of different methane sources from 1980 to 2010. They concluded that the increase was in part due to fossil fuels and partly due to expanding wetlands.

Canadell emphasises the research is not able to pinpoint the exact source of the methane, but says the sheer growth in

mining has likely contributed to the rise in atmospheric methane.

‘We know that coal production over the last seven years has been higher than ever in the world,’ he says. ‘And higher mining of coal is always likely to bring more methane fugitive emissions.’

Canadell says sometimes these mining emissions can be caught or burnt, but sometimes leaks are not detected or not easily controlled – citing mining of coal seam gas, as a case in point.

‘For example, if there is fracking and there is leakage, there's no way to control the leak.’

Canadell says the natural contributor to increasing methane emissions would be due to La Niña and other conditions that expand wetlands and their associated anaerobic decomposition.

He says, based on average figures for the decade 2000–2010, about half of methane emissions come from human activity and half come from natural sources – the main contributor of which are wetlands (62 per cent).

Agriculture accounts for 60 per cent of anthropogenic methane, with 27 per cent coming from livestock and 10 per cent from rice growing. Fossil fuels, predominantly fugitive emissions from mining, account for 29 per cent of anthropogenic methane emissions and the rest comes from burning biomass.

Source: ABC Science

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