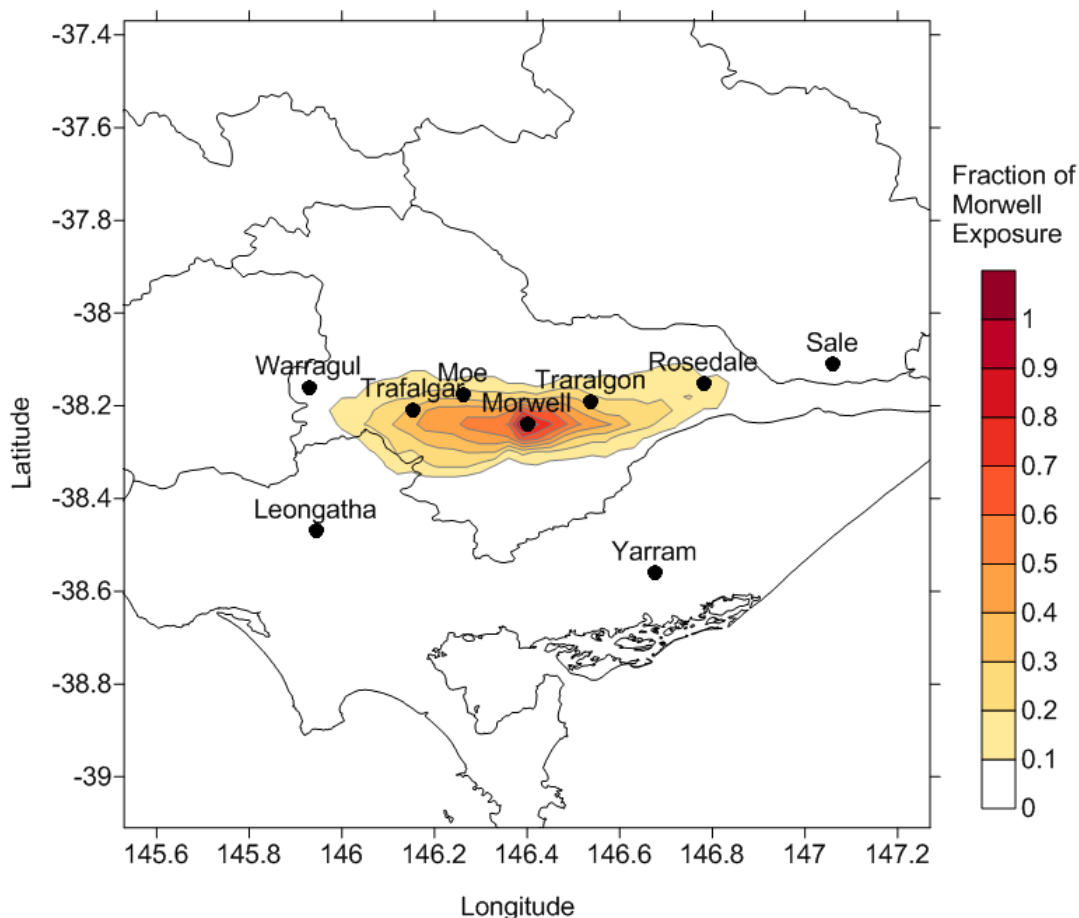


Estimation of smoke exposure from the Hazelwood mine fire

On 9 February 2014 the Hazelwood open cut brown coal mine in the Latrobe Valley, Victoria, caught fire. This resulted in the nearby town of Morwell being covered in plumes of smoke and ash over a period of six weeks. The Latrobe Valley was exposed to the most smoke from the fire, and the smoke could be smelled for hundreds of kilometers.

Researchers from Monash University are studying the health of people living in the Latrobe Valley town of Morwell, which was closest to the fire. The study will span 10 years to see if the smoke has caused health problems. The research also needs to study people in a town nearby that only experienced a low level of smoke exposure, in order to look at the differences in health compared to Morwell.

The air quality team at CSIRO has made preliminary estimates of how the smoke travelled in the air using weather data such as wind direction, speed and temperature, and computer models. The team investigated how far the smoke travelled and how often the smoke passed over different towns in the Latrobe Valley and the broader Gippsland region for the duration of the fire.



Caption: The variation in smoke exposure (relative to the exposure experienced across Morwell) in the Latrobe Valley and beyond, as estimated by the CSIRO model.



Smoke is measured as the weight of particles smaller than 2.5 thousandths of a millimetre in size (referred to as PM2.5). There is an advisory quality standard for these particles which is 25 micrograms (millionths of a gram) per cubic metre as a 24 hour average. Observations showed that Morwell and Traralgon experienced the highest levels of smoke. Towns such as Rosedale, Warragul, and Sale received lower levels of smoke.