



# Environmental Health Indicators For New Zealand

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EHI #25

November 2011

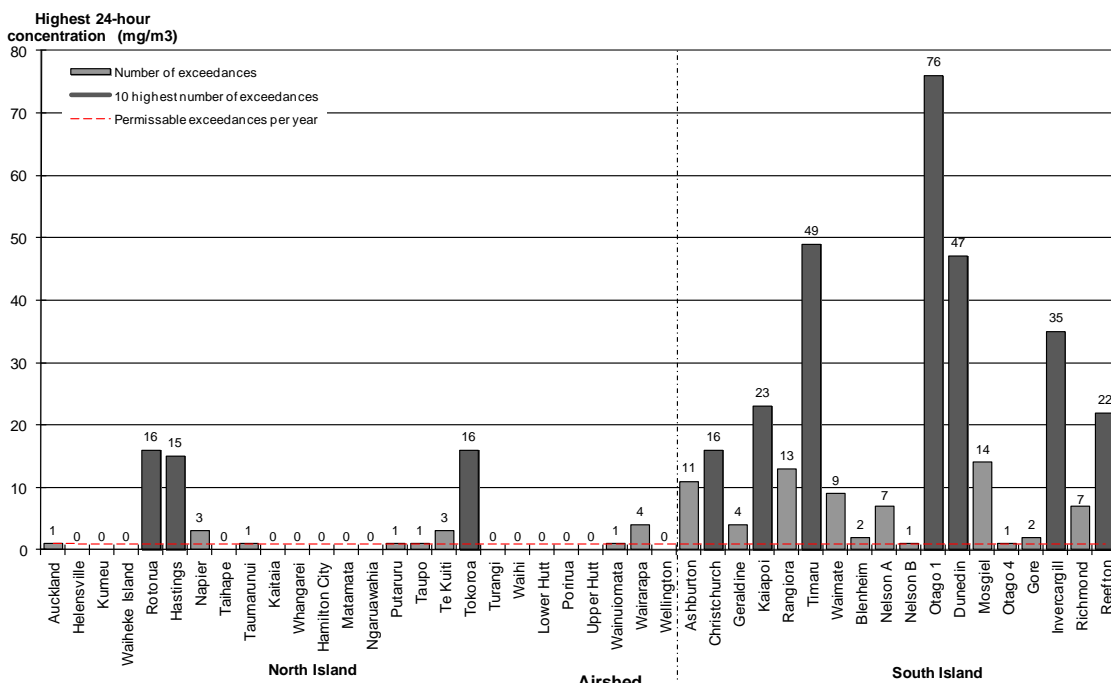
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## PARTICULATE MATTER (PM<sub>10</sub>) – EXCEEDANCES

Particulate matter with a diameter of less than 10 micrometres (PM<sub>10</sub>) can penetrate far into the human lung, and short-term and long-term exposures to PM<sub>10</sub> have predominantly been associated with the exacerbation of respiratory and cardiovascular conditions (WHO 2006a). Most poor air quality in New Zealand is caused by high winter levels of PM<sub>10</sub> from coal and wood used in home heating (Ministry for the Environment 2010a). Additionally Auckland also experiences high levels of PM<sub>10</sub> from road transport (Ministry for the Environment 2007). Particulates are also produced from atmospheric reactions of other compounds such as SO<sub>2</sub> and nitrogen oxides (Cromar et al 2004), as well as natural sources such as dust, pollen, ash, sea salt and soil particles (Fisher et al 2007).

**Figure 1**  
NUMBER OF EXCEEDANCES OF THE NATIONAL ENVIRONMENTAL STANDARDS FOR AIR QUALITY FOR PM<sub>10</sub>, by airshed, 2010



Note: The broken line represents the maximum number of exceedance days (one day per year) allowed under the National Environmental Standards for Air Quality.

Source: Ministry for the Environment ; J Fyfe, Personal communication, 29<sup>th</sup> September 2011

## NUMBER OF EXCEEDANCE DAYS

2 new airsheds were monitored in 2010, Kaitiaa and Helensville, and 2 airsheds that were monitored in 2009 were not monitored in 2010, Waiuku and Karori. Six of the twenty-six airsheds in the North Island and 16 of the 18 South Island airsheds breached the PM<sub>10</sub> standard in 2010 (4 less than 2009) by exceeding the PM<sub>10</sub> standard more than once in the year (Figure 1). In 2010 the Otago 1 airshed exceeded the national standard for PM<sub>10</sub> most often (76 exceedance days), a greater number of times than in 2009 (60 exceedance days) but fewer than in 2008 (91 exceedances). Timaru (49 exceedance days), Dunedin (47 exceedance days), Invercargill (35 exceedance days), and Kaipoi (23 exceedance days) airsheds also exceeded the national standard frequently in 2010.

## References

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- Cromar N, Cameron S, Fallowfield H (eds). 2004. *Environmental Health in Australia and New Zealand*. Melbourne: Oxford University Press.
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