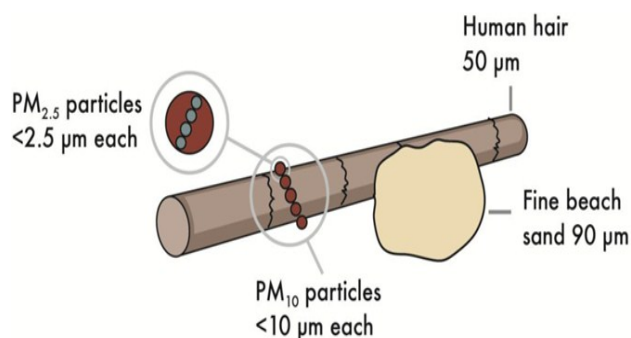


## Airsheds that Exceeded the PM<sub>10</sub> National Standard on two or More Days

### HIGHLIGHTS:

- In 2013, 21 out of the 37 monitored airsheds exceeded the PM<sub>10</sub> standard on two or more days.
- The number of airsheds that exceeded the PM<sub>10</sub> national standard on two or more days ranged from 19 to 26 from 2006 to 2013



Source: Ministry for the Environment, 2014

### Short-term exposure to high PM<sub>10</sub> can cause health effect within 24 hours.

Good air quality is fundamental to our health and wellbeing. We each breathe about 14,000 litres of air each day. Contaminants in outdoor air can adversely affect our health.

Particulate matter (PM) consists of small airborne particles, including solid matter and liquid droplets. PM in the air can contribute to heart and lung diseases, leading to hospital admission, cancer and premature death (WHO, 2013; Loomis et al., 2013).

PM<sub>10</sub> (particles with a diameter less than 10 micrometres) is the major air pollutant monitored in New Zealand. Short-term exposure to high PM<sub>10</sub> can cause health effects (e.g., respiratory, cardiovascular health effects and premature death) within 24 hours (WHO, 2013). Monitoring the number of times the national standard is exceeded helps to understand how often people are exposed to short-term poor air quality (Ministry for the Environment & Statistics New Zealand, 2014).

The National Environment Standards for Air Quality (NESAQ) includes a daily PM<sub>10</sub> standard defining the minimum requirements that outdoor air quality must meet (Ministry for the Environment & Statistics New Zealand, 2014).

### In 2013, more than half of all monitored airsheds exceeded the PM<sub>10</sub> standard on two or more days

In 2013, daily PM<sub>10</sub> concentrations were measured in 37 airsheds (areas defined for air-quality management purposes, generally based around urban and city areas) (Ministry for the Environment & Statistics New Zealand, 2015).

In 2013, more than half (21) of the 37 monitored airsheds exceeded the daily PM<sub>10</sub> standard on two or more days. This was an increase from 19 (out of a total of 38) airsheds in 2012 (Table 1).

In 2013 (Table 1):

- one airshed exceeded the PM<sub>10</sub> standard on over 50 days
- two airsheds exceeded the PM<sub>10</sub> standard on 21–50 days
- six airsheds exceeded the PM<sub>10</sub> standard 11–20 days
- twelve airsheds exceeded the PM<sub>10</sub> standard on 2–10 days.

Table 1: Number of airsheds exceeding the PM<sub>10</sub> national standard on two or more days, 2012-2013

Exceeded days	2012	2013	Change
2–10 days	8	12	↑
11–20 days	6	6	-
21–50 days	5	2	↓
50+ days	0	1	↑
<b>Total</b>	<b>19</b>	<b>21</b>	<b>↑</b>

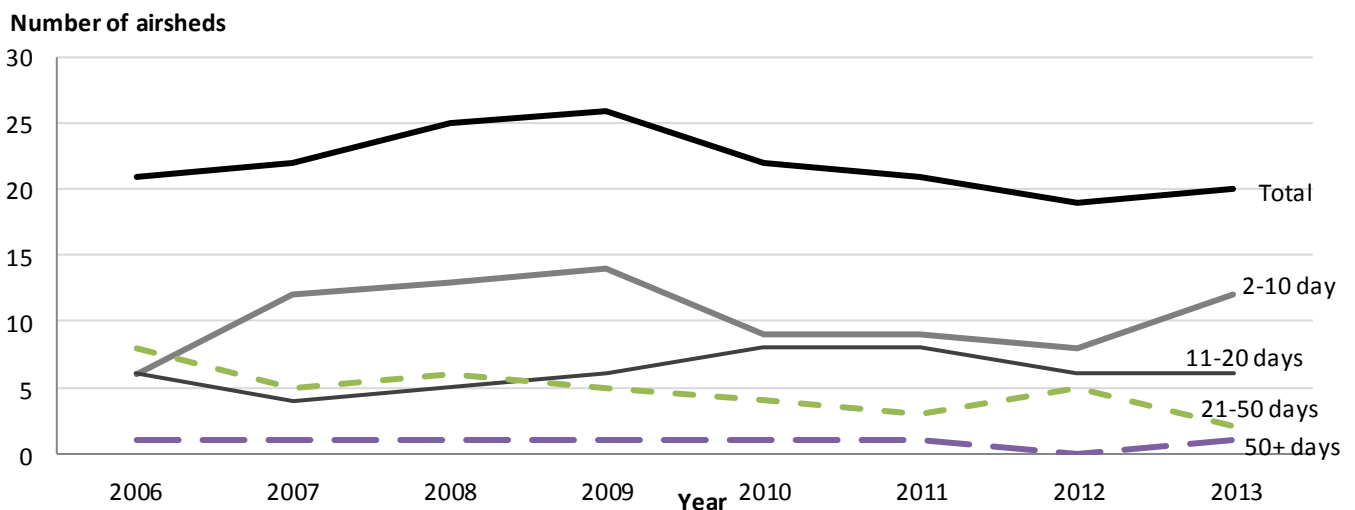
Source: Ministry for the Environment & Statistics New Zealand, 2015

Ninety-five percent of the exceedances of PM<sub>10</sub> standard happened in winter. This was due to higher emissions from wood or coal fires for home heating. The calmer weather condition at winter time also slowed down the pollutant from dispersing (Ministry for the Environment & Statistics New Zealand, 2015).

**The number of airsheds that exceeded the PM<sub>10</sub> national standard on two or more days ranged from 19 to 26 from 2006 to 2013.**

In the period 2006-2013, the lowest number of airsheds that exceeded the PM<sub>10</sub> national standard on two or more days occurred in 2012 (19 sites) (Figure 1).

**Figure 1: Number of airsheds exceeding the PM<sub>10</sub> national standard on two or more days a year, 2006-2013**



Source: Ministry for the Environment & Statistics New Zealand, 2015

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**References:**

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