

Information topic	Details
Indicator name	Annual average PM₁₀ levels at monitoring stations
Domain and topic	Air quality: Particulate Matter
Indicator definition and units	Annual average concentration of PM ₁₀ at monitoring sites in µg/m ³ . The World Health Organization (WHO) recommends a 20µg/m ³ guideline of annual PM ₁₀ to provide a minimum level of protection against long-term health risks (WHO 2006).
Data Source	Ministry for the Environment Statistics New Zealand
Methodology	The national annual average value is reported as a population-weighted annual average PM ₁₀ concentration. It is population weighted by using Statistics New Zealand's population estimates to represent the population's average exposure to PM ₁₀ (Ministry for the Environment and Statistics New Zealand 2014).
Spatial coverage	All sites that were reported by the Ministry for the Environment and Statistics New Zealand
Time period and time scale	Annual; from 2006 onwards
Measures of frequency	Annual average concentration of PM ₁₀ at monitored sites
Limitations of indicator	<ul style="list-style-type: none"> - Only sites that have PM₁₀ concentration monitored will be reported. - Trend assessments are conducted on annual estimates and may not fully account for seasonal effects.
Limitations of data source	<ul style="list-style-type: none"> - Not all sites are monitored (monitoring information is only included if the site achieves greater than 75% valid data collection) - Some of the monitoring occurs at peak sites (sites expected to have high concentrations e.g. where home heating emissions accumulate or close to high-volume road traffic). These sites may therefore not be representative of the surrounding area. - Approximately 35% of New Zealand's population resides within unmonitored areas, meaning a national representative average cannot be compiled.
Related indicators	Exceedances of the daily national standard for PM ₁₀ , including maximum PM ₁₀ levels
Created by	Ministry for the Environment and Statistics New Zealand
For more information	Ministry for the Environment. Particles. Available from http://www.mfe.govt.nz/air/specific-air-pollutants/particles (accessed March 2017)

	<p>Statistics New Zealand. Annual average PM₁₀ concentrations. Available from http://www.stats.govt.nz/browse_for_stats/environment/environmental-reporting-series/environmental-indicators/Home/Air/pm10-annual-average-concentrations.aspx (accessed March 2017)</p> <p>Ministry for the Environment and Statistics New Zealand. New Zealand's Environmental Reporting Series: Environment Aotearoa. Available from www.mfe.govt.nz and www.stats.govt.nz</p>
References	<p>Ministry for the Environment and Statistics New Zealand. (2014). <i>New Zealand's Environmental Reporting Series: 2014 Air domain report</i>. Available from www.mfe.govt.nz and www.stats.govt.nz</p> <p>WHO. (2006). <i>WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Global update 2005. Summary of risk assessment</i>. Geneva: World Health Organization.</p>