

Particles (PM₁₀)



Liveability | Air quality

South Australia's environmental trend and condition report cards 2023



Trend
Stable



Condition
Fair



Reliability
Very good

STATE

Trend

Annual average levels of ambient PM₁₀ particles have remained stable, with shorter-term variability associated with climate.

PM₁₀ particles are solid or liquid matter smaller than 10 micrometres (0.01 mm) in diameter suspended in Earth's atmosphere. This assessment is of annual average levels of PM₁₀ measured at 11 air quality monitoring stations across metropolitan Adelaide, Port Pirie and Whyalla (top figure). Not all stations were operating for the entire assessment period.

Between 2007 and 2017, ambient levels of PM₁₀ particles either reduced or remained stable. Since 2017, PM₁₀ particle levels have been increasing (bottom figure). Weather conditions can have a significant impact on particle levels. Below-average rainfall and drier conditions across much of South Australia in 2018 and 2019 likely contributed to elevated levels of PM₁₀ in those years.

The technology used to monitor particles can impact the level of PM₁₀ measured. Two different monitoring technologies were used during the assessment period.

Why is managing PM₁₀ particles important?

Ambient particles are the greatest air quality-related risk to human health, particularly in urban areas. PM₁₀ particles are small enough to be inhaled into the lungs and enter the bloodstream. Both short and long-term exposure to particles can have health effects, which may include aggravation of cardiovascular and respiratory diseases, cancer, and premature death.

PM₁₀ particle pollution can also affect ecosystems and agriculture, and reduce visibility (e.g. dust storms).

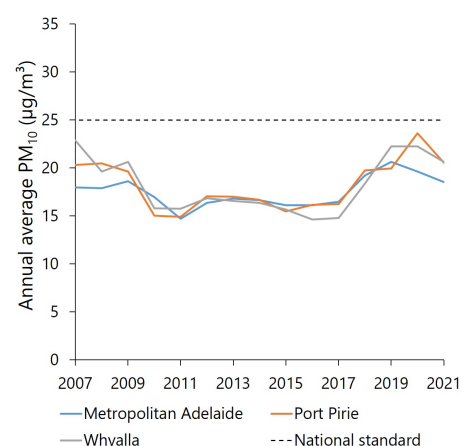
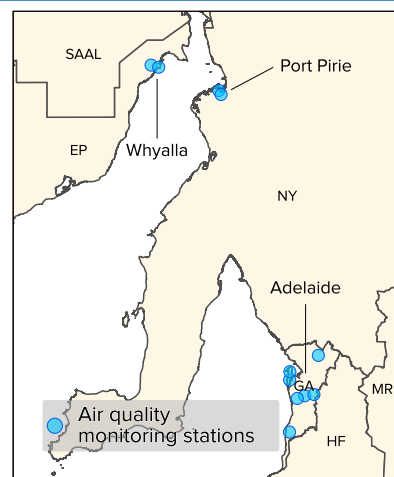
Condition

Air quality is rated as fair based on measured levels of ambient PM₁₀ particles in Adelaide, Port Pirie and Whyalla.

In 2021, the long-term levels of PM₁₀ particles averaged 18.5 micrograms per cubic metre (µg/m³) in metropolitan Adelaide, 20.7 µg/m³ in Whyalla, and 20.6 µg/m³ in Port Pirie. The national standard of 25 µg/m³ was met at all sites (bottom figure).

Levels of PM₁₀ measured at sites in Port Pirie and Whyalla were generally higher than those measured at sites in the Adelaide metropolitan area in 2021.

Annual average PM₁₀ particle concentrations have been stable over the long-term and meet the national standard.



What are the pressures?

Levels of ambient PM₁₀ particles are influenced by emissions from a range of sources, including: transport; domestic, industrial, commercial, agricultural, forestry and mining activities; and the use of energy and resources.

Increasing population and higher-density living are placing increased pressure on our ability to manage particle emissions and reduce exposure.

Climate change is another pressure, with predictions of more frequent extreme events likely to result in further exposure to PM₁₀ particle pollution.

What is being done?

All levels of government are collaborating with other sectors to better understand and reduce the risks from air pollution.

The Government of South Australia maintains a network of monitoring stations to measure and track pollutant levels and conducts targeted air quality studies. Other programs include the National Clean Air Agreement, regulation of industry, vehicle fuel quality and engine emissions standards, product standards, modernising transport infrastructure, and investments in modern technology and renewable energy.

For further information see: [technical information](#)



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